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Where Do We Go From Here?[1]

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IT PAYS to know one's *Alice in Wonderland*, for in that famous work of philosophy may be found thoughts suited to many dilemmas. For instance:

Alice was a little startled by seeing the Cheshire Cat sitting on a bough of a tree a few yards off.

The Cat only grinned when it saw Alice. It looked good-natured, she thought: still it had *very* long claws and a great many teeth, so she felt that it ought to be treated with respect.

"Cheshire Puss," she began, rather timidly, as she did not at all know whether it would like the name: however, it only grinned a little wider. "Come, it's pleased so far," thought Alice, and she went on. "Would you tell me, please, which way I ought to go from here?"

"That depends a good deal on where you want to get to," said the Cat.

"I don't much care where—," said Alice.

"Then it doesn't matter which way you go," said the Cat.

"—so long as I get *somewhere*," Alice added as an explanation.

"Oh, you're sure to do that," said the Cat, "if you only walk long enough."

Alice felt that this could not be denied, so she tried another question. "What sort of people live about here?"

"In *that* direction," the Cat said, waving its right paw round, "lives a Hatter: and in *that* direction," waving the other paw, "lives a March Hare. Visit either you like."

Now you will notice several things about the shrewd observations made by that Cheshire Cat, not the least of which is his belief in self-determination rather than predestination. We all know people who are convinced that since the world has been brought to a sorry pass, we have no choice but to accept our fate. We may complain, but there is nothing more useful for us to do than to wring our hands. Not so the Cat, whose advice is for decision and action. Decide where you want to get to, find out whose house is at the end of the road to the right, and whose down the road at the left, and visit either you like. To be sure, the Cat's next remarks are less encouraging, and seem sadly in tune with our time, for he continued the conversation by saying:

"They're both mad."

"But I don't want to go among mad people," Alice remarked.

"Oh, you can't help that," said the Cat: "we're all mad here. I'm mad. You're mad."

"How do you know I'm mad?" said Alice.

"You must be," said the Cat, "or you wouldn't have come here."

The Cat, as usual, is probably right. Here we are, however, and we must now determine what roads are presented to us, where they go, and where we want to get to. Then we must decide which road we shall take.

Any statistician who is trying to make predictions bases his judgment on history and trends. How many people will have tuberculosis in 1980? What will be the average age of the population of Shangri-La in the year 2000? What will be the rainfall for the month of June? All such forecasts, if made by reputable authorities, are based on a study of the past. Let us therefore look into the past to forecast the future.

Each century has had its pattern, and that of the eighteenth century was political revolution in many countries of Europe and in America. Some of these revolutions may seem to have been caused by lack of food—"Give us bread," said the mobs of France—but hunger actually was a secondary cause. Read *Hunger and History*, by Prentice.

It is startling to realize that only in the past hundred and fifty years has any part of mankind been reasonably well assured of freedom from famine, and that only in Europe and in America has that fundamental goal ever yet been possible to achieve.

Mankind had always been hungry, and had always accepted recurrent famine as a normal part of life. Revolt came only at a time and in those countries where hunger and famine were less, and when improvement in agricultural method, coinciding with the opening of new lands, gave the common man time to think. As long as practically all the population of necessity had spent all their waking hours in the struggle to find or produce food, man had accepted his hard fate patiently—even, perhaps, too patiently. Now that he could sit at his

[1] Presented before the Washington State Dietetic Association, January 18, 1946.

doorstep in the twilight and ponder and converse with his neighbors, it occurred to him for the first time that the common man was a person, and that people have rights. Then—revolt, and the first dawn of political freedom. You may demur at that, and remind me of the republics of Greece and Rome, but the republics of Greece and Rome had many slaves and few voters.

Increased leisure brought another result—people began to want more than just enough food to fill their stomachs, and clothing and shelter for protection from cold. They started to make the things they wanted and then, with leisure for creative thinking, they began to putter around in an effort to invent easier ways of production, and in fifty years or so, they were putting machines together for the spinning of thread and the weaving of cloth. Machines took production out of the homes into mills, and the lever had been pulled to start the wheels of industry. The start of the industrial revolution was the pattern of the nineteenth century, and with the proliferation of machines came the development of wants far beyond the dreams of kings of earlier years.

Meanwhile, great changes had come about in ethical and social concepts. Before the middle of the eighteenth century, sympathy was a luxury that man could ill afford. Unable to supply his own barest needs, not knowing how many of his own children might starve before the next year was out, he had not even sympathy to spare for the children of his neighbor. Accustomed as he was to misery and pestilence and death as part of his daily surroundings, it never occurred to him that things could, or should, be otherwise. The coming of the machine made things worse, because in order to work together in large groups, people must move together into cities. Their living, then, depended entirely on the machine they served, and on the pleasure of the person who owned that machine. It is futile to say, a hundred years later, that if the mill owners of that day had paid high wages, worked their employees reasonable hours that allowed for a decent standard of living, refused to countenance child labor and to exploit adult workers, the world would have been different. The fact remains that everyone is a part of the age in which he is born, and we would have done no differently then. The middle of the nineteenth century brought a beginning of social conscience, with Dickens and other novelists writing about the common man as a person, and bringing exploitation to public attention, with Florence Nightingale and Clara Barton making the care of the sick a public concern, with the mighty upheaval which resulted in the end of legalized human slavery in America; but social concern then took the form of Lady Bountiful with a basket, deriving a sense of personal virtue and satisfaction and superiority from giving some slight temporary relief to a situation which should, instead, have been dug out at its roots.

We stand too close to the pattern of the twentieth century to be able to see its design, but certain trends are apparent. One of the most striking, and encouraging, is that now at last we have been told that this is "one world." Man's social concept started with the family unit; families banded into tribes, tribes banded into nations—always the law of the jungle has prevailed and like predatory animals we have snatched at the possessions and even the lives of everyone outside our own herd. We may continue to do so, for human nature does not change and human reactions change only as fast as changes in environment condition new generations differently, but at least an ideal has been stated which a hundred years ago it would have been impossible to conceive. Encouragement can be found, too, in the fact that we are willing to give at least lip service to the concept that *all* men—not just the rich and the powerful—must have the opportunity to live healthfully, happily, and fruitfully; that all must have freedom from want, freedom from fear, freedom of speech, and freedom of religion. To be sure, we shall not so act as to assure the fulfilment of that ideal, either—but the first step is to conceive the ideal, and that first step would not have been possible in any century earlier than our own.

It is apparent, too, that this is the century when man will demand an adequate income as his right, with no need for Lady Bountiful. Tolerance for the views of others has increased. Do you remember Hawthorne's *The Scarlet Letter*, the story of the girl who was forced to wear an "A" on her clothing? We do not now condone adultery—but we would think that society's crime in ruining a whole life was greater than that of the girl in the story. With the increase of knowledge and the decrease of fear and superstition, we stopped burning witches. I remember many people, not so long ago, who led exemplary lives, went to church on Sundays, helped and patronized the poor, and spent their time, like the Pharisees, thanking God that they were not as other men. Even in our present dilemma, if we take a historian's long view we can see some improvement, and say with Churchill, "The tunnel may be long and dark, but at the end there is light."

Some of the other manifestations of present trends are less encouraging, for it is apparent that our material and scientific progress has outrun us, and that society is like a man who has reached physical and intellectual maturity but whose emotional status is still adolescent. Such a person is a case for a mental hygienist or neuropsychiatrist, who must convince him that his choice is to grow up or crack up. That is our choice in this generation—to

stop acting like egocentric spoiled children, or to drive our civilization to its ultimate destruction. Since, like the Cheshire Cat, I still believe we can determine our destination, I insist that the choice is ours. We are not the helpless victims of "trends," but free agents who can bend those trends by the force of will, especially by collective will.

Anne Morrow Lindbergh's book, *The Wave of the Future*, depicts the future as a wave that is to flow over and engulf us. I prefer to talk about the opportunities of the future, our opportunity to create a better world. We have let some of that opportunity slip through our grasp, but some is still where we can clutch it. The first motto my grandmother taught me was, "If at first you don't succeed, try, try again." There is no use in spilling tears over the old world that has gone. It was not a good world, anyway, except for a few fortunate people. The new world can be better, much better, for most people, if those who have been trained for leadership, lead well. That includes us, as professional women. If we can build on what has been achieved in both material and ethical progress, and control the forces of material destruction and emotional schizophrenia, we can take our generation a step forward. Patience and the historical view will tell us that one step is enough for any one generation.

Do you know the story about the two mice who fell into a tub of cream? One called "Help, help, help!" and in the morning they found him drowned. The other said "Hustle, hustle, hustle" and in the morning they found him riding on a lump of butter.

Now where do we come in? As professional people we are singled out for several reasons. Having received at the hands of society the special privileges of good heredity, good environment, and the foundations of a good education, we are in debt to society, a debt that we can never entirely repay. *Noblesse oblige.*

In the code of ethics of the American Dietetic Association we read:

> The dietetic profession is primarily concerned with the improvement and maintenance of national health. The first obligation of each member of the American Dietetic Association is to render service of the highest quality for the common good, regardless of personal gain or monetary reward. . . . The personal conduct of each member is the criterion for judging the value of the individual, her colleagues, and her Association. Professional skill, honesty, good judgment, poise, and human sympathy are the necessary qualities for a worthy and successful member of the American Dietetic Association.

First, then, we serve, and by that service we shall establish our status. Second, we maintain our personal and professional standards—no easy task in a decade which seems to have lost its respect for standards—and by our standards we shall measure our stature.

Service, to us, usually means two separate responsibilities—the job we are paid to do and the jobs we do in the community for which we are not paid. Both are important, and both warrant our best efforts. Whether the job we are paid to do is food production, diet therapy, or teaching, whether the community work is service on committees, or as consultants, certain principles are fundamental and the same. One is that while routine may be a necessary tool and a means to an end, we must not confuse the means with the purpose. The goal is to further the national health by feeding people satisfactorily, and while remembering to order the eggs may be a necessary step in achieving that purpose, it is only a step. Another fundamental is this: that creativeness born of thought is what turns the job from dullness to satisfaction, even though thinking in itself is very hard work. A third principle, which seems to me to be most important, is that the dietitian's job primarily is planning and supervising and teaching, not the actual doing—except in the case of the young dietitian who must learn to do before she can either plan or supervise.

A reminder of this fact is especially timely just now, for we have spent the last few years in too much doing, at the expense of planning and supervising. This was necessary, for that was our part in a war. Our show had to go on, and we are proud of the fact that it *did* go on. Now, however, we must take stock of the cost, and realize that we must start on the long way back. In emergencies, the dietitian's hands will always be turned to use, but emergencies should soon become fewer. It is our job to *plan* the kitchen, *plan* the budget, *plan* the menus, *plan* the schedules, *plan* the diets. It is our job to *supervise* food production and service, the clean-up job, and the clerical work of necessary record keeping. When we are *doing* any of these things, we are on someone else's job. If this is temporarily necessary, we must scheme our way out of the emergency even as we are meeting it. No one can be both worker and manager, and we are foolish if we try, for the one detracts attention from the other. If your management job does not engage your full attention, you are lacking in imagination as to the possible scope of that job.

If you continually drain water from a reservoir without any intake, that reservoir is soon empty. This applies in the maintenance of standards. We are in that state now, I fear, for depletion of standards has been another of the costs of the last few years and we must therefore do an intensive job of refilling the reservoir. How? Well, first, after we have become rested, let's get more joy out of life than we have been—not necessarily by taking more time for recreation, but by living more vigorously.

Then let us read, and read, and read—and think, and think, and think. And on our jobs, let's worry more about organizing the show to run itself, so that we may be able to spare ourselves worry about the details of running it.

Then, let's see if we can find out what is going on in the world, and figure out why. Let's stretch our horizons to encompass more of literature and history, sociology and economics. Let's try to learn why people behave like human beings.

And let's try to be interesting, attractive people. What do we read, and what do we talk about? What do we give to those with whom we associate, so that we may hold their interest? What do we look like? We should look like the adults we are, rather than simulate adolescence, but we may as well be interesting looking adults instead of drab ones.

What has all this to do with our future? Why, everything, for as we sow, so shall we reap. Physical fitness, intelligence, mental alertness, professional standards and integrity, worldliness in the sense of awareness of the world and being a part of it—the future is in our hands, and these are the attributes we must bring to it if we are to mold it to our design.

Where are we dietitians going? I believe we stand at the fork in the road. We can become non-professional foremen or professional executives. The choice is ours. To be a professional person is the more difficult, for any profession is a hard mistress whose service can be drudgery if it is grudgingly given.

Where are dietary departments going? If the usual steps in evolution follow through, the dietary department of the future will be simpler than that of the past. Evolution in any art or science would seem to fall into four stages. The first, or peasant stage is one of unsophisticated simplicity, and it is usually functional, direct, and very good art. But the peasant goes to town, sees gadgets and wants them, and without understanding what he is doing adds them to his previous efforts, to the great detriment of his standards. This second stage is that of unsophisticated complexity. Then his children go to college and learn the reasons and the principles of the art or science in question, and since they cannot quite bring themselves to give up the gadgets, they enter the stage of sophisticated complexity. Not until enough generations have gone by for the grandchildren to learn quite a lot about the ways of the world, can they advance—or return, if you like, to simplicity—only this time it is sophisticated simplicity, simplicity by choice. The rule holds in food and clothing and home furnishings, and it also holds in organizations. The ultimate in skill produces a product so simple that only in flawless perfection is it right. To that we should aspire in our departments.

Sweat and Salt

A NUMBER OF PREPARATIONS containing sodium chloride have been made available commercially for distribution during hot weather to office employees, industrial workers and others. Some of the products are simple tablets containing sodium chloride, others have enteric coating to permit passage of the material into the intestine before disintegration occurs, and still others contain additional substances such as minerals and vitamins. All are intended to provide sodium chloride and other factors to combat the harmful effects of excessive heat, exercise and sweating.

The need for the addition of vitamins and salts other than sodium chloride and minerals to salt tablets does not have sufficient evidence to justify their routine use until more satisfactory evidence is provided. However, there is strong evidence that additional amounts of sodium chloride, in addition to that in the diet, should be given to those subject to strenuous exercise and excessive perspiration. Normally, those leading a sedentary life do not need salt in addition to the amount ordinarily placed in food.

Under ordinary conditions the appetite or hunger for salt regulates the intake. A simple criterion used by many to judge the amount of salt needed is the amount of water drunk and excreted per day. When the total water intake is under 1 gal. per day the amount of salt in the usual normal diet (about 16 gm.) is claimed to be adequate to cover salt losses by sweating, but with water intake above 1 gal. usually more salt is needed.

The amount of salt taken should be adjusted to actual need and, as is known, this need will vary with exercise and acclimatization. In areas where periods of hot weather are broken by cooler weather or where people are subjected to strenuous exercise only at periodic intervals, the need for salt supplement may exist only during these special periods, and this need may become less after the people become acclimatized. There is such great variance among different individuals according to their physiologic adjustments that it seems best to provide a 0.1 to 0.2 per cent drinking water and salt solution when need for extra salt seems indicated. The needs of some may easily be satisfied merely by the addition of salt to their food. A 0.1 per cent solution may be made by dissolving about 1 gm. sodium chloride in each quart of water, or about 1 gm. per liter.—*Excerpts from a report of the Council on Pharmacy and Chemistry, J.A.M.A. 129: 131, 1945.*

High Protein Diets in Therapy of Rocky Mountain Spotted Fever[1]

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ROCKY Mountain spotted fever, an acute infectious disease of great severity, causes marked disturbances in many functions of the body. The illness occurs most frequently in the spring and early summer, when ticks which carry the organisms become active. Most of the cases in the South occur in children who play in rural and suburban areas. The disease tends to run a relatively long febrile course which is associated in many instances with delirium or coma; convalescence is prolonged.

The organisms causing the infection damage blood vessels in the skin, brain and other organs, so that necrosis and death of tissue follow. Damage to the liver and kidneys, as well as to other organs, can be demonstrated at autopsy by pathologic-anatomic methods and during life by studies of the function of the organs. Collapse of the circulation analogous to the shock caused by burns sometimes occurs (1). Since no drug has yet been found which will kill the organisms in the body after the first three days of rash, the treatment of more advanced cases is largely supportive. Because many patients are unable to take adequate amounts of water or food by mouth, parenteral injections of fluids are frequently given. Although observations in the past have shown that the injection of fluids may be harmful to the patient, the principles underlying the proper choice of fluids to make such injections safe have recently been discussed (2). Previous to undertaking the present studies, we found that fluid balance can be maintained and nutrition improved in comatose patients or children by the use of frequent feedings of high caloric liquids through a continuous indwelling nasal catheter.

[1] Received for publication February 25, 1946. This study was aided by a grant from the John and Mary R. Markle Foundation.

PREVIOUS STUDIES OF DISTURBANCES INVOLVING PROTEINS

Careful studies of patients ill with rickettsial spotted fever have demonstrated disturbances in mineral and protein metabolism. Associated with the damage to blood vessels, edema of the lungs and brain, in addition to that visible in the skin, has been found and is accompanied by a decrease in the blood proteins. The edema in most instances will be corrected when the osmotic relationships are brought more nearly to normal by the intravenous administration of pre-formed proteins in the form of plasma or whole blood. The circulatory collapse can thus also be remedied by transfusions of blood or plasma.

Preliminary studies in previous years have shown by the amount of nitrogen excreted in the urine that protein is destroyed rapidly during the acute febrile stage of the disease, but that little *intact* protein, as measured by the excretion of albumin, is lost in the urine. The recognition of marked impairment of hippuric acid synthesis by the liver suggested that protein might not be formed from that taken in the diet. A review of records of cases of rickettsial spotted fever treated in this hospital in previous years indicated the necessity for a protein supplement.

DIETARY REGIME EMPLOYED AT THE NORTH CAROLINA BAPTIST HOSPITAL

Basic Diet. On the basis of these previous studies it was felt that a high protein intake was the most essential factor in dietary supportive therapy. Accordingly, a basic diet containing 2.5 to 3.0 gm. protein per kilogram normal body weight and adequate calories for normal requirements was offered. The standard high protein, high vitamin pediatric house diet used in this hospital is as follows:

Protein	70 gm.
Fat	57 "
Carbohydrate	145 "
Calories	1,373 "
Vitamin A	12,302 I.U.
Vitamin D	45 "
Thiamin	2 mg.
Niacin	7 "
Ascorbic acid	150 "
Riboflavin	3 "

This diet has provided the basis of supportive therapy in the 8 cases of Rocky Mountain spotted fever in children treated in the North Carolina Baptist Hospital since the beginning of 1945. A careful record of the patient's protein intake at each meal was kept on a chart devised for this purpose. Meat, fish, chicken, cheese, gelatin, and Casec were weighed; the protein contained in cereals, milk, fruit, eggs, and vegetables was estimated. Every attempt was made to induce the patients to take the basic diet. If, because of delirium, coma, or uncooperativeness on the part of the patient, the desired protein intake was not achieved, the diet was supplemented or replaced by gavage feeding.

Supplementary Gavage Feeding. In order to administer as much protein as possible and to protect the liver from additional damage, a supplement high in protein and low in fat, with sufficient carbohydrate to render it high in calories, was devised. To decrease the fat content, skim milk, instead of whole milk, was given. The formula was fortified with protein in the form of powdered milk, and corn syrup used as the source of carbohydrate. In view of our clinical impression that vitamin requirements are increased during fever, most of the vitamins were included in large amounts. Since it was the custom on the pediatric service, where most of the patients were treated, to use proprietary vitamin preparations, this practice was continued.

The gavage formula consisted of:

Skim milk	850 cc.
Powdered milk (Casec, Mead Johnson)	100 gm.
Corn syrup (Karo)	75 "
Percomorph oil (Mead Johnson)	20 drops
Vi-penta (Hoffmann, LaRoche)	50 "
Ascorbic acid	500 mg.
Thiamin chloride	50 "
Riboflavin	10 "
Menadione	1 "

This amount contained 115 gm. protein, no fat, 118 gm. carbohydrate, and 932 calories (0.9 per cc.).

Upon refrigeration, the mixture thickened; it was warmed to body temperature before administration. The mixture had a consistency and flavor similar to malted milk, and patients who were not comatose found that the addition of chocolate syrup made it sufficiently palatable to be drunk from a cup. The addition of this flavoring agent increased the carbohydrate content slightly, but the fat content only negligibly. Patients were given the choice of drinking a supplementary feeding or having it administered through a stomach tube passed after each meal. Usually 250 cc. of the feeding was offered at 10:30 a.m., 3 p.m., 8:30 p.m., and 3 a.m. If the patient twice refused to drink the supplement, a gavage tube was passed. Four of the 8 patients required passage of a tube at some time.

If the protein intake from the basic diet was sufficient, the supplementary feeding was omitted. Of the 8 patients studied in 1945, however, only one child took the basic diet well enough to make supplementary feedings unnecessary. Supplements were usually continued into convalescence. No diarrhea or constipation resulted from the concentrated feeding; distention, which frequently occurs with rickettsial spotted fever, was not increased.

With such a supplement, as much as 115 gm.

TABLE 1

Protein intake

CASE	AGE	HEIGHT	WEIGHT		HOSPITAL STAY	BASIC DIET		SUPPLEMENT		TOTAL AVERAGE
			Admission	Discharge		Minimum	Maximum	Average	Days given	
	yr.	*cm.*	*kilo.*	*kilo.*	*days*	*gm./kilo/day*	*gm./kilo/day*	*gm./kilo/day*		*gm./kilo/day*
1	2	91	12	13	28	0.3	6.4	1.4	11	4.5
2	8	108	23	22	14	1.0	2.4	0	not given	1.8
3	4	105	16	—	18	1.0	3.3	3.1	7	5.0
4	6	126	21	21.4	15	0.9	3.0	3.9	7	6.0
5	4	108	17	—	20	0	4.2	6.1	12	8.3
6	10	135	31	32.4	16	1.0	2.1	3.4	16	6.6
7	7	124	19	20.3	16	1.1	3.2	5.5	15	7.5
8	3	94	14	15.4	21	0.3	1.8	4.8	19	5.3

protein and 118 gm. carbohydrate, plus the accessory vitamins, were given to a 4-year-old boy in 24 hours. In some cases, 6.1 gm. protein per kilogram body weight were administered daily. The maximum daily protein intake achieved with the basic diet plus the supplement was 9 gm. per kilogram. The data are summarized in Table 1.

The vitamins contained in the supplementary feeding are listed below:

Vitamin	*Content per 1000 cc.*	*Daily requirement of children 10–12 yr. (3)*
A	36,700 I.U.	4500 I.U.
Thiamin	54 mg.	1.2 mg.
Niacin	8 mg.	12 mg.
Riboflavin	13 mg.	1.8 mg.
Ascorbic acid	670 mg.	75 mg.
D	7000 I.U.	800 I.U.
K	1 mg.	—

In reviewing the data on our experience this year it was discovered that the formula of one of the proprietary vitamin preparations used had been changed May 1, 1945, almost simultaneously with the admission of the first cases. The intake of niacin had therefore been inadequate, and thiamin had been administered in excess and was probably largely wasted. Vitamins A, B_1, C and K *should* be given in excess because of the suspected effect of these on infection, shock, capillary fragility, and bleeding tendency. Niacin should be given in the form of the amide, since nicotinic acid may not be methylated in the presence of liver damage.

Results. The details of the alterations in protein metabolism are being reported elsewhere (4). It was found that the protein given by mouth was utilized and that while the protein disturbances noted previously could not be entirely prevented, their severity was decreased. Blood protein levels during the peak of the disease were higher in these patients than in those who were treated in this hospital when the daily protein intake was lower. High protein diet therapy was found to be useful, even when a potent specific antiserum was used early in the course of the disease. The administration of antiserum, although it decreases the severity of the protein disturbances, does not prevent them. The administration of a high protein diet appears to have decreased the severity of cerebral symptoms and of edema. We believe that convalescence has been shortened. Several children not only maintained their weight, but *actually gained weight* during their illness (Table 1).

The principles outlined may be followed in designing diet therapy for other rickettsial diseases. We have found them useful in the treatment of cases of endemic typhus fever, a disease similar to spotted fever though much milder in its course.

High protein diets have been widely advocated for patients who have been subjected to surgical procedures when the dietary intake has been restricted, and for patients who have lost protein from areas denuded and damaged by burns (5). In acute infectious disease of more than a week's duration, the requirements for protein may be equally as great, and deserve more attention than has been accorded them.

SUMMARY

1. Since no specific chemotherapeutic drug is effective in rickettsial spotted fever after the third day of the rash, therapy in more advanced cases must be largely supportive.

2. Unless circulatory collapse is present, diet is the most important factor in supportive therapy.

3. The diet should be high in protein to prevent disturbances in protein metabolism, and low in fat and high in carbohydrate to protect the liver from the damage which usually occurs.

4. The daily protein intake should range from 4 to 9 gm. per kilogram normal body weight, and the diet should contain sufficient calories to maintain body weight. If an adequate protein intake is not obtained with a standard basic diet, a liquid supplement should be given by mouth or by gavage tube.

5. The intake of all vitamins should be greatly increased during the illness.

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The Dietary Management of Diabetes Mellitus

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SINCE the advent of insulin has made it possible to abolish the rigors of the dietary treatment of diabetes, there has been a growing tendency to relax the diet restrictions and to shift the burden of treatment to insulin. In the extreme this development has reached the point where diet, for all practical purposes, is disregarded. This attitude is supported by the apparent impunity with which the neglect of the diet is continued by patients taking insulin. Yet it stands in contradiction to the results of investigations carried out in the pre-insulin era. The principles evolved from these results were confirmed and enlarged in the later periods of treatment. They are as valid today as they were 25 years ago, and form the basis of the modern scientific diet. The difference between the present management and that formerly resorted to is that earlier the diet was the only effective means of controlling diabetes, whereas now, in insulin, we have another powerful means.

The fact that many cases cannot be well controlled by diet alone and that some depend on insulin for their salvation, does not detract from the importance of the diet. Before the use of insulin, the majority of cases were controlled through diet, the average duration of life was prolonged considerably, and death from coma markedly reduced. Many of the failures during this pre-insulin period were not the fault of the diet—rather of the patient who failed to keep it, or of the doctor who did not prescribe it correctly. Furthermore many cases are not controlled today, even with the use of insulin, and many of these failures are likewise due to lack of proper dietary control. Thus in 1946 as well as in 1914 the proper diet is indispensable and is the foundation of the treatment of diabetes.

For better understanding of the modern dietary regime it is advantageous to review the story of its evolution. The development of the diet in diabetes is intimately bound to the concept of the disease, and knowledge and correct interpretation of its symptoms which, in turn, are influenced by advances in our knowledge of the science of biochemistry. Since the application of chemistry to living matter is a rather recent offspring of the mother science, it is not surprising that the greatest strides in the evolution of diet have been made during the last 30 years. Thus the history of diet in diabetes is rather erratic and only since 1914 has it been given a well-grounded scientific basis that facilitates clear and purposeful development.

Attempts at treating diabetes with diet are more than a century old. With but few of the symptoms known and none clearly understood, it was natural that treatment should be carried out on a trial and error basis. The earliest objective chemical sign known was the appearance of sugar in the urine, glycosuria, which was responsible for the disease being called diabetes mellitus, a term derived from the Greek, meaning the passing of sugar. The earliest treatment consisted in removing the offending agent, sugar, from the food. Later, when relationships were recognized, those substances closely related and easily convertible into sugar, such as the starches, were also restricted. This measure was justified theoretically and confirmed in practice by the diminution or disappearance of sugar from the urine and general improvement in many cases. The reduction of carbohydrate in the food, therefore, is the earliest effective dietary measure in use and the only one that has persisted through the many variations of dietary treatment into the modern plan. It is still valid.

THE NAUNYN ERA, 1898–1914

Since the reduction of carbohydrate in the food meant a considerable diminution of the quantity of food, the difference was made up by increasing the other constituents, protein and fat. The result was what is known today as the low carbohydrate, high fat and high protein diet. This dietary regime was the mainstay of treatment in the earliest days and especially during the Naunyn era (1898 to 1914), a very important one in the history of diabetes. During this time the pathology underlying diabetes was explained by the experiments of Von Mering and Minkowski, and the significance of the role of heredity as a common etiological factor was recognized by Naunyn.

Beneficial as the diet of this era was in treatment, it had definite limitations. Many of the more severe cases responded poorly or not at all and some became even worse and developed ketosis. For this reason other means were sought and found. It was observed that starvation had a remarkably beneficial effect, even in many cases refractory to standard treatment. Naunyn advised and employed starvation days at certain intervals in the treatment of difficult cases. He also recognized empirically the value of caloric restrictions in general, as did many others before 1914. However, no scientific basis was known for these practices.

Another means of dietary treatment in those days was the various "cures," such as the use of a certain kind of food for a definite period. The best known of these was the "oatmeal cure" sponsored by von Noorden in 1903. There were other such remedial measures in use long before this, however. In 1852 von During had used potatoes and later Mosse used rice. In 1874 a skim milk cure had been advised by Donkin. While some favorable results were obtained by such means, they were inconstant and on the whole unsatisfactory. In addition, these cures were often impractical, so were not generally adopted. Their direct value was less, so far as the patient was concerned, than their indirect value as a stimulus to research workers who as a result endeavored to explain the peculiar and in some ways apparently paradoxical effects of these "cures." Numerous theories were advanced, such as: that the particular form of carbohydrate in the oatmeal or the fact that the carbohydrate was given in one single form was responsible for the cure; or that the bland nature of the diet was responsible, or the low protein content, and so on. All these theories were subsequently disproved.

Probably the most therapeutically effective factor among these earlier cures was the reduction of the total calories and fat, a procedure which often accompanied the cures. In the light of modern knowledge this alone could well explain the beneficial effect. This also probably explains why von Noorden's methods achieved better results, because in his original publication he advised several "vegetable days" preceding and following the "cure," all of which amounted to temporary undernutrition. All these cures have now been abandoned completely.

Such was the state of affairs in diabetic diet therapy in 1914, with progress at a standstill for the past decade and an empirical dietary regime consisting of a low carbohydrate, high fat and high protein diet and occasional fasting. This system, while undeniably successful in many cases, was on the whole far from satisfactory and failed particularly in the severe cases. With the negligible amount of knowledge of metabolism in diabetes then available, hardly anything more could be expected.

THE ALLEN ERA, 1914–1922

As previously mentioned, periodic fasting and undernutrition had been practised intentionally and unintentionally in the Naunyn era and had been found beneficial. It remained for Frederick Allen to put the practice of fasting and undernutrition on a scientific basis and thus devise a most efficient therapeutic approach. He proved prolonged fasting to be efficacious and feasible. His experience was not gained by trial and error, but was the result of systematic, scientific experiment, and his method was proved effective in animals before it was tried with humans. From his observations he came to new and important conclusions concerning the metabolism of diabetes, which were later confirmed by others and which stimulated further research. The underlying principles of his dietary regime are still valid and form the foundation of the modern plan.

In the old days diabetes was considered a disturbance of the carbohydrate metabolism, and only that. The new investigations showed that although the reduced assimilation of carbohydrate was the most prominent factor in diabetes, it was not the only one nor even the only important one; *e.g.*, the fatal diabetic ketosis is the direct result of disordered fat metabolism. It was shown that while reduction of carbohydrate and replacement by fat could make a urine sugar-free, it could also in some cases, especially in the severe cases, make the condition worse. It was shown that fat added to the diet of a controlled diabetic would cause glycosuria and vice versa, and that alcohol which cannot be converted either to carbohydrate or fat, had the same effect. In fact, glycosuria could be produced in a sugar-free diabetic by any kind of overloading of the total caloric metabolism, even when the carbohydrates were retained within their previously established limit of tolerance.

In addition to the carbohydrate tolerance, a new factor had to be recognized—the caloric tolerance. The sinister effect of fat in precipitating the dangerous ketosis and the limits of the permissible variations of the carbohydrate-fat relationship or ketogenic ratio, too, were demonstrated. Since metabolism is proportional to the mass of living matter, the weight of the organism also had to be considered.

The result of these investigations in the first place was a recasting of the concept of diabetes on a much broader mould. Diabetes was now recognized as a metabolic disorder affecting not only, though primarily, the assimilation of carbohydrate, but also the other food constituents, in fact all dietary contributors to the total caloric metabolism. The next logical consequence was the refitting of the dietary regime to the new concept.

The main dietary measures of the Allen era, as this period from 1914 to 1922 is fittingly called, were fasting and undernutrition. Milder cases were

started on a diet of one third to one half the required calories and kept there until the urine cleared up. Body weight was reduced to normal, as a matter of course, even when glycosuria had long since disappeared. If the response was not satisfactory, undernutrition was continued until the patient was sugar-free (and this was the usual result), or until danger of death by starvation made further reduction unwise.

In the more severe cases, the procedure was even stricter; treatment was initiated with fasting for one or more days, rarely as long as a week or more. When glycosuria had disappeared, the diet was slowly raised to the limit of the tolerance or slightly below, at which point it remained. With no other effective means available the patient had no other choice if he wished to survive. This regime was severe, but it produced results far better than anything before. Patients with mild cases got along quite comfortably for life; the moderately severe, for years, once they were accustomed to the restrictions; while those with severe cases could exist free from the distress of symptoms, even though life were only a passive existence. Moreover, emaciated patients bore fasting and undernutrition surprisingly well. Almost all uncomplicated cases could be cleared up before the danger point of death from starvation was reached. Even many of the severest cases were kept alive—barely, it is true—but long enough to be finally saved by insulin when those fed less rigidly had long since died.

The results of this treatment were so constant and the scientific explanations so convincing that this regime became universally accepted. As a result, the duration of life of the diabetic was lengthened 25 per cent and death from coma reduced from 60 to 40 per cent. In regard to the proportions of food constituents, this diet regime was low in carbohydrate, moderate in protein, moderately high in fat, and low in calories. Roughly, the proportions were: 1 to 1.5 gm. carbohydrate, and 1.5 to 2 gm. fat, to 1 gm protein. The calories were about 20 to 30 per kilogram body weight. Needless to say, this regime imposed a great hardship on many of the severe cases and it is not surprising that some of the patients preferred an early and painless death in coma to a prolonged and hopeless invalidism. This was the state of affairs in 1922 when insulin came into use.

THE INTRODUCTION OF INSULIN

Tremendous as was the influence of insulin in the treatment of diabetes, in principle it was not revolutionary. It did not alter the underlying principles of treatment, but it did modify their application to such an extent that the hardships inherent in the earlier and stricter dietary program could be avoided. It enabled a dietary regime which had been efficient to be also humane. Insulin was not, and even now is not an alternative to the diet—merely a supplement that has made possible the correction of metabolic deficiencies and consequently has liberalized the application of the therapeutic principles to the extent that the diet can approach more normal quantities and proportions. In that respect it advanced progress corresponding to that which took place in the Allen era as compared with Naunyn's time, and by allowing a fuller application of its principles, proved their fundamental lasting value. Fasting was abolished, not because it was wrong, but because its benefit could be obtained another way and without hardship and disadvantages. Prolonged undernutrition was abandoned, not because it was ineffective, but because the same result could be accomplished with the patient at normal weight and full working capacity. Temporary undernutrition still has its merits; it accelerates considerably the progress brought about by the use of insulin.

The essential value of insulin lies in the fact that: (1) it saves those patients who cannot be saved by diet alone; (2) it ensures success in those cases where diet alone is life-saving but does not restore full health and capacity; (3) it permits the application of diet without its hardships.

In turn, the effect of insulin is greatly enhanced by proper diet and its optimum use is directly dependent on diet.

The first practical effect of insulin on diet was the lifting of painful and incapacitating restrictions. The total caloric value of the diet could be raised to the level necessary not only for life, but for good health and full working capacity. The supply of food could be adjusted to the demand, regardless of the severity of the disease and the tolerance of the patient. Furthermore, the proportions of the constituents could be brought more to the normal level. The new proportions were about 2 gm. carbohydrate to 1 gm. protein, and 1.5 gm. fat, with around 30 calories per kilogram for moderate activity. In other words, the diet became moderate in carbohydrate, protein, and calories, and slightly high in fat. All of this led to a more normal diet as compared with that of the Allen era. Today, if we casually note a diabetic tray, we merely conclude that the consumer is of moderate habits and has a dislike of concentrated sweets. This alone must have seemed like liberation to the many survivors of the preceding era and certainly gave them a new lease on life. In human values the modern diabetic program meant the abolition of death from diabetes, and a life worth living in spite of diabetes.

USE OF HIGHER CARBOHYDRATE DIETS

Safeguarded by insulin, research now began to go forward into fields of investigation hitherto unapproachable, such as the effect of higher carbohydrate intake on the diabetic metabolism. This

work was done by Adlersberg and Porges in Vienna in 1925 and by Sansum, Geyelin and Rabinowitch in this country from 1926 to 1931. These investigations were inspired partly by such observations as these: that normal diets have more carbohydrate and that it is rational to lean toward the normal; that diabetes seems more common in those countries with high fat diets, and of a milder form in countries with high carbohydrate diets. In part these incentives to research in the high carbohydrate field were results of such previous investigations as those which revealed that diabetics live longer if they are not exposed to prolonged and extreme reduction of carbohydrate; that additional carbohydrate has a reviving effect in extreme inanition and the reverse if much fat is added; that coma usually followed a reduction of carbohydrate or increase of fat in the diet; that postoperative acidosis could be avoided by giving carbohydrate; and that even the severest diabetic had some power to assimilate carbohydrate. With this in mind, diets were used that had about 3.5 to 4 gm. carbohydrate to 1 gm. protein and 0.5 gm. fat per kilogram, which is essentially a normal dietary ratio in this country. Each of the just-mentioned investigators emphasized the avoidance of overnutrition.

The advantages of this dietary regime according to its sponsors were: a higher sense of well-being in the patient, a more palatable menu, less desire to break the diet, less susceptibility to ketosis and infections. All this was possible by means of a small increase in insulin dosage or none at all. Some claimed even less insulin was required per carbohydrate and caloric intake.

Joslin, after scrutinizing these results and claims and comparing them with his own experiences, concluded that on the earlier dietary regime a diabetic will live at least 20 years, or practically his normal span of life. That this would be true under the new dietary variations remains to be seen, he stated. The impulse to break the diet would not be materially lessened, and if the diet is not observed, the tendency would be in the most harmful direction—carelessness in fat intake; whereas under the old method of treatment the infraction was in the least harmful direction—increased carbohydrate ingestion. Joslin does not believe in a diminished or unfluctuating need for insulin nor in his experience can he confirm the belief that lower figures for blood sugar will follow this diet. He admits the need of more carbohydrate in the diabetic child's diet. Time alone, he believes, will prove or disprove the superiority of the new variation and in the meantime it is but rational to follow a program of proved value.

My own experiences coincide very much with those of Joslin. Although not universally accepted, the high carbohydrate, low fat diet has become widely popular, and more so with patients than with physicians. In view of the excellent results with the more moderate diets, the advantages of the new variation can hardly be so great as some claim.

THE "FREE" DIET

From a diet so nearly like the normal menu as is the high carbohydrate diet, it is only a short step to complete freedom from any quantitative or qualitative restrictions, or to complete disregard of the diet as a therapeutic measure. The so-called "free diet" was introduced in Europe during the last 10 years by Ercklentz, Stolte and Muller and in this country by Tolstoi. In addition to the above-mentioned arguments for the high carbohydrate diet, the free diet is urged on the basis that patients who have persistently disregarded any diet but have taken their insulin regularly appear to have had no ill effects. The persistent glycosuria is regarded as nothing more than a slight economic loss from an overabundant supply which more than satisfies all the needs of the body, while hyperglycemia, in itself, is considered harmless.

This regime allows the patient to eat what and how much he pleases "within reasonable limits," that is, to live as any normal non-diabetic provided he takes enough insulin to ensure that sufficient food will be metabolized for all the needs of his body, and provided ketonuria is avoided and the patient is kept under observation to ensure all this. In other words, restrictions are exchanged for provisos.

As in the case of the high carbohydrate diet, no final objective decision on the merits of the free diet can be made as yet. Objections come to mind, from a well-founded, theoretical point of view of the diabetic as a once normal human being. Since the normal human is one who maintains constant blood sugar levels within certain limits and a urine free from sugar, this condition is obviously to be desired. The presence of a persistently high blood sugar physiologically stimulates the pancreas continually; this is abnormal and tends to reduce even more an already diminished capacity of the pancreas. The patient therefore depends very heavily on an extraneous supply of insulin for his safety. The need for insulin fluctuates and there is no means of determining the extent of this by tests in these cases. Furthermore, if complications arise, in my experience such a patient is but a short distance from the dangers of ketosis. He has, as a rule, less reserve and is not warned in time of an increased need for insulin. There is also the effect on the morale of the patient. While the lifting of dietary restrictions will elate the spirit of the patient, the conferred sense of freedom, again in my experience, tends to weaken his adherence to other necessary but burdensome measures, such as the regular use of insulin and periodic checkups. The question then arises, where shall we draw the line of "reasonable limits"?

With nothing more to offer than the subjective evidence that the patient is well and the objective evidence that in a few years he has suffered no demonstrable damage—weighed against the advantages of a more strict but not unpleasant regime which has been proved over a period of more than 20 years—I may be pardoned if I cannot yet see eye to eye with the apostles of complete emancipation.

THE "MODERN" DIABETIC DIET

What then can we offer the diabetic today as a "modern" diet? It must be one conducive to good health and full capacity; it must be well within the limits of the patient's economic and living circumstances and satisfying to his reasonable desires as a human being and as an individual. A diet is given to be kept, not to be broken. Its value is judged by the results; the best diet is of no value if the patient cannot keep it.

Based on valid principles and with due regard for reasonable claims of the most recent variations, we can say that the safest course is somewhere along the middle of the road. In principle it represents nothing essentially new. It is still based on the foundations established in the Allen era. The concepts of carbohydrate tolerance, caloric tolerance, carbohydrate-fat relationships and the influence of weight still hold good today. Where the difference occurs is in the application of these principles. Compared to the Allen era, the modern diabetic diet represents a shift in the direction of normal eating habits with a normal carbohydrate-fat ratio, that is, more carbohydrate and less fat. It also means a normal, variable supply of protein and enough calories to meet the legitimate needs of the organism. Expressed in figures, this would mean for a moderately active person 1 to 1.5 gm. protein, 2.5 to 3 gm. fat per kilogram, as well as about 30 calories per kilogram and a ratio of 1.5 to 2 carbohydrate calories to one of fat. Expressed in common language the moderate diet supplies the patient's needs in approximately normal proportions, but nothing more. Basically, the diabetic has the same needs as the normal man, but his reduced tolerance will not permit him to satisfy them. He can never afford to take more than he needs, as the normal person can. It is the purpose of the extraneous insulin to make up this deficit and enable the diabetic to meet all the necessary demands. To indulge in more is at best an unnecessary luxury and waste, which the diabetic can ill afford. A proper diabetic diet in the modern sense should fulfil the following purposes:

1. Keep the diabetic condition under control, with or without the aid of insulin; that is, the urine as clear of sugar and the blood sugar as nearly normal as is reasonably possible.

2. Keep the patient in good health and at full working capacity.

3. Keep the weight at the optimal level, which is the lowest weight at which points one and two can be accomplished.

In regard to proportions, the diet should come close to the normal, whatever that may mean! It is important to realize that a normal diet may show wide variations in its constituents. For our geographical location the relation between the three food constituents is about 4 to 5 gm. carbohydrate, 1.25 to 1.5 gm. protein, and .75 to 1.5 gm. fat per kilogram body weight. In India, it is approximately 6 to 8 gm. carbohydrate, .75 to 1 gm. protein, and .25 to .5 gm. fat per kilogram body weight. The Eskimo, on the other hand, uses the following proportions: 0.2 to 1 gm. carbohydrate, 3 to 4 gm. protein, and 1.5 to 2 gm. fat per kilogram body weight.

We hear much of the well-balanced diet today. It may be that our well-balanced diet would not keep the Eskimo or Hindu in good health, nor would we feel well on their fare. A wide range of adaptability, however, is characteristic of normal vigorous life; the so-called normal diet is merely that which has been established by man's natural environment, to which he had adjusted himself quite well before he ever knew the meaning of balanced diets. It is the purpose of a good diet to keep man fit in his own surroundings. The modern diet with the aid of insulin is able to accomplish this, because it is very flexible. The vitamins, of course, are as important in the diabetic diet as in the normal one. One can well be guided by the general rule that the farther removed any article of food is from its natural form the poorer its vitamin content. The same applies for minerals. Fluids are supplied as the thirst demands. Forcing them is at best an unnecessary burden on the circulation and of no conceivable advantage.

Some attention must be paid to the kind of food in the diabetic diet. In general it is advisable to avoid concentrated forms of carbohydrate; they furnish the least bulk and make the meal small and less satisfying. Besides, such readily available carbohydrates are quickly absorbed and raise the blood sugar to high levels so speedily that the available insulin cannot take care of it and much is lost in the urine. Therefore sugar and sweets should be avoided, starches above 60 per cent should be restricted, and less concentrated fruits and vegetables should be emphasized. How far these modifications should go depends very much on the individual's condition and the diet prescribed; no hard and fast rules, therefore, can be laid down. There is, for example, no reason why, on a diet with a carbohydrate allowance above 150 gm., a small portion of ice cream cannot be allowed now and then. Alcohol has no place as a dietary constituent, but in moderation it may be tolerated. If the patient is accustomed to alcohol in moderation, is well controlled and reliable, I often permit small amounts.

If it is used regularly it is included in the calculation, if used very occasionally and in small amounts, I disregard it. Soft drinks should not be allowed. Beer, if consumed regularly, should be calculated. In this calculation alcohol is considered as fat although its caloric equivalent in the body does not conform to any of the normal constituents.

DISTRIBUTION OF THE FOOD ALLOWANCE

In regard to the distribution of the food allowance, in general it is preferable to adjust the distribution to the eating habits and occupation of the patient. After all, our aim is to aid him in leading a normal life of good health and full capacity and in reasonable comfort. Certain modifications may become advisable, however, and these are determined by whether he takes insulin and when he takes it, and what type is used. Fractional urine examinations have shown the after-breakfast urine most usually to be the one high in sugar. It appears that the pancreas requires more time to be aroused to adequate activity, since usually there is more sugar in the urine in the forenoon than later in the day. In addition, the use of extraneous insulin can never be so well regulated, and its response so adequate in promptness, intensity and duration, as the internal insulin which is regulated physiologically. Therefore large meals may produce glycosuria, despite an even more than adequate supply of insulin.

From this we may infer that it is better to distribute the food widely over the day with the least amount at breakfast—one fifth to a quarter of the total allowance. The continental light breakfast and heavier luncheon is definitely preferable; the ordinary hospital routine with three nearly equal meals, calorically, a late breakfast and an early supper, crowded into less than 10 hours, is the least desirable. Where protamine insulin is used, a small night lunch on retiring is often necessary to protect against reactions during the night, particularly if the dose exceeds 15 units. This night feeding should include from 5 to 25 gm. carbohydrate, according to the diet allowance and insulin dosage. Enough other constituents can be added to make it palatable. In general, these rules can be quite well observed with most patients. Those who do night work can easily be accommodated by shifting the whole schedule so that a meal corresponding to the breakfast is served when the patient arises, whenever that may be.

PREPARATION OF THE DIET

Last, but by no means least, consideration must be given to the preparation of the food. In this respect, I am afraid the average diabetic diet falls short. Any therapeutic diet means a deviation from the patient's normal tastes, from what he enjoys most in food. Either we force him to eat foods which he would not otherwise eat, or withhold those which he has always preferred. Thus we are likely to antagonize him from the start. As a rule, a patient is willing to undergo a great deal of hardship such as fasting and undernutrition, if he believes it is necessary for his well-being. This is done willingly if he feels that the hardship will end with complete recovery. But in this respect we must disappoint the patient, if a diabetic; his condition being controllable but not curable, the diet prescribed as a means of treatment must remain for life. The patient therefore deserves our sympathy and encouragement as well as our help, and we must make his lot as easy as possible. We should render what is left to him as pleasing and appealing as we can. This is not a question of science but of art.

It is a deplorable fact that the art of cooking is not taken into due consideration in books for the diabetic, but this neglect makes the problem no less important. The diabetic may talk, as many do, quite impressively of carbohydrates, protein, fat and calories, but this only cloaks his real interest—a juicy steak, a palatable vegetable of his own choosing, and a salad prepared the way he used to enjoy it. To satisfy such normal desires is a part of the noble science and art of cooking. Proficiency in the art is just as important as knowledge of the science. This cannot be overemphasized, for the value of a diet is judged by its results.

A diet which is not kept does no good, no matter how correct it is scientifically, or what reasons may be given for breaking it. In my experience, lack of appeal is one of the most common causes for breaking the diet. The most frequent complaints registered are monotony, tastelessness, and disregard of individual likes and dislikes. These complaints are not specific for the diet, but rather for the food, just as in an ordinary meal. Since the diet today is so close to a normal fare in quantity and proportions all the arts of skilled cookery can and should be applied to the fullest possible measure. Do not overlook the appetizing appeal of clear soups, of a tasteful gravy on dry meat, and of the judicious use of spices with a flat vegetable.

It is of great help to analyze the patient before writing his diet. Corn, potatoes, spaghetti and rice are interchangeable forms of carbohydrate—the one will appeal to the Irish patient, the other to the Italian. Individualization is as important in dietetics as in medicine. While the facilities in this respect are necessarily limited in larger institutions, nevertheless with some effort and ingenuity a great deal can be accomplished. I hope I will be pardoned since I am induced by my own experience and that of other physicians, if I take this opportunity to address a fervent appeal to you, to take the art of dietetics as seriously as the science. It is the prime task of practitioners of dietetics to translate the scientific figures on individual requirements into appealing dishes. If science and art are well compounded into the making of a tray, the diet will never fail to be one of the most effective therapeutic measures in diabetes.

The Role of Personality and Environmental Factors in Obesity[1]

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IN AN extensive review of the literature concerning alimentary obesity, Newburgh (1) concluded that persons with this symptom are alike in at least one respect—they overeat. The causes of such behavior are not altogether clear, however, and the present investigation was designed to secure more detailed information on certain possibly significant factors relating to motivation and childhood experience.

Although obesity is the symptom under consideration, the behavior requiring explanation is excessive eating. Various causative factors have been suggested. Newburgh pointed to the possibility in some instances of parental overemphasis on the importance of food; in other cases, the mere act of eating may serve to reduce anxiety arising from failure in intellectual tasks or social and sexual relationships. Both hypotheses seek to explain the kind of reinforcement which developed the habitual response of overeating.

In seeking a psychoanalytic explanation, the roles of libidinal development and the development of fixations must be considered. Lindner in 1879 in his studies on sucking habits in children noticed how intently sucking was engaged in even when its purpose was not one of obtaining food, and Freud, commenting further, stated that gratification of the need for nourishment and gratification of the erotogenic zone are inseparable in their earliest stage.

According to Abraham (2), this primitive form of pleasure persists throughout life under numerous disguises, being repressed and reinforced at times but never completely abandoned. With maturation the original pleasure from sucking is exchanged for other pleasurable acts. A process of evolution begins with the eruption of teeth, followed by weaning, anal control and genital gratification. Aspects of the character may be influenced by fixations at various stages of the libidinal development.

In the normal formation of character, derivatives from all the original instinctual sources are harmoniously combined. In the oral character, distortions occur as a result of fixations during the oral stage, the details of the character structure being determined by the stage at which fixations occur. Persons whose entire characters are under oral influence were believed by Abraham (3) to have engaged in a highly pleasurable and undisturbed sucking period in early life, followed by periods of inactivity and dependence. Fixations, not necessarily at the oral level, may be displaced and thus appear to be oral in character.

Overeating is a form of oral activity which, in obese persons, appears to have great strength as a habitual response. When a reaction that is normally relinquished at an early age is retained in the face of socializing influences, it may be described as a fixation, according to Sears (4). Assuming that obese persons have oral fixation involving direct oral gratification, answers to the following questions have been sought: are obese women more dependent and more passive; are they more feminine in their sex-typing; do they show as much genital sexual behavior; do they show as much social behavior?

EXPERIMENTAL PROCEDURE

Standardized interviews were done on 30 obese women subjects and 30 controls. The subjects were married and single women between the ages of 19 and 47. Subjects in the experimental group were classified as obese, their weight being between 20 and 72 per cent above the theoretical weight for their age and height as determined by the height-weight-age tables published by Eli Lilly and Company. The individual members of the experimental group were matched with individuals in the control group on the basis of education, height, age, and marital status, weight being the variable factor. The weight of the subjects in the control group was between 10

[1] Presented in partial fulfilment of requirements for the degree of Master of Science in the Department of Nutrition, State University of Iowa. This study was carried out under the direction of Dr. Robert R. Sears of the Iowa Child Welfare Research Station.

per cent above and 10 per cent below the theoretically normal weight as determined by the same tables. This is the range of normal weight.

The questions asked pertained to food habits, oral habits, sexual and social activities, family relationships, and social environment. In order that the Terman-Miles Attitude-Interest Test might be used as an objective measure of masculinity-femininity characteristics, at least an eighth grade education was a requisite for the subjects selected. The subjects were told that the data would be used for a study on the relationship of personality and environment to body size. After the interview, which was conducted with only the subject and interviewer present, any questions the subject wished to ask were willingly answered. An analysis of the results led to the following conclusions:

1. Newburgh's statement that all obese persons overeat is substantiated. The eating habits of the obese group were statistically different from those of the control group in regard to nibbling, kind of food selected, and second helpings. Other eating habits, although not statistically different in terms of reliability, disclosed prevailing tendencies. The obese person does give a history of overeating. In addition, this study quite emphatically brought out the fact that the obese person is an irregular eater, both in regard to meals and lunches, that he chooses from a more limited food list because of numerous dislikes, that he eats unbalanced meals with frequent between-meal nibbling of high-caloric food which he prefers, and that although he eats faster he spends more time at the table than do the non-obese.

2. The extensive orality which characterizes the obese person is satisfied mainly through eating, for few alternative oral habits are evidenced by this group. The differences in orality between the two groups which have been pointed out in this study are apparently concerned with the greater tendency toward oral characters in the obese individual. Although this study revealed no differences between the two groups in regard to sucking habits, a somewhat longer prolongation of biting habits was found to exist in the obese group. Since oral gratification is not satisfied through the use of alternative measures, such as smoking, drinking, chewing gum, whistling, talking, and singing, the obese seek food as an outlet for orality. Apparently extensive orality in the obese reverts mainly to food.

3. Obese women are more dependent and passive. These characteristics were noted in their family relationships which were markedly different for the two groups. No consistent preference for either parent existed in either group, which coincides with the results secured on the Terman-Miles Attitude-Interest Test; no difference in sex-typing was found to exist between the groups. Both groups displayed an equal amount of affection toward the parents and neither group showed any jealousy of the parents.

The obese woman's family appeared to be one in which the mother of the subject was somewhat dominant; whereas the father was more dominant in the control group. The participation of the whole family in social functions was considerably more prevalent in the obese group. Dependency, too, is characteristic of the obese. A large majority of the obese subjects informed their parents of everything they did in their teens and continued to do so even after marriage. Even in making a decision as to choice of clothes, a great deal of dependency upon others was shown by the obese subject.

The obese person feels the necessity of family support and prefers being near home; in fact, many have never been away from home. Likewise the obese person tends to be more passive and submissive. The rejection of ideas and the rebellion which are apparent in the non-obese do not prevail extensively in the life of an obese individual. The patterns established for the obese person early in life continue to prevail and dominate the individual. The obese group was somewhat more restricted and therefore might have had less opportunity to rebel or make decisions. However, the willingness to be submissive and yield to parental demands was much in evidence in all family relationships, in contrast to the unwillingness of the control group.

4. The belief that obese persons are socially immature is substantiated by this study. The contrast in social relationships between the two groups indicated the earlier and more active participation of the control group in heterosexual activities throughout life. In keeping with the more passive nature of the obese person it was of interest to note that obese females were well satisfied with their role as women and showed no desire to adopt masculine pursuits, whereas the controls frequently felt that urge, giving as their reason the wish for more liberty. The groups were similar in regard to "crushes"—the normal sequence in sexual maturation, and age at the time of the first "date"; they were dissimilar in regard to age at time of the first interest in opposite sex, age at time of first kiss by one of the opposite sex, and in degree of interest in "dates". The control group matured earlier in this respect. A marked difference existed between the two groups in regard to the social function of dancing. A much larger proportion of the obese group did not learn to dance and those who did, learned at a later age. Social activity for the obese appears to be definitely restricted by the parents. This, coupled with their innate willingness to be submissive, is conducive to their social immaturity.

SUMMARY

This comparative study of obese and normal women with reference to personality and environmental factors has brought to light the following characteristics of the obese as compared with the

non-obese: more dependent and passive; same degree of feminine sex-typing; fewer alternative oral habits; less evidence of socio-sexual behavior; less social maturity; closer attachments to parent family.

In studying the obese person, one must realize that food is more than an organic necessity to him; in all probability it constitutes his chief source of satisfaction for a multitude of interests.

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The New 80% Extraction Flour

Acting to carry out recommendations of the President's Famine Emergency Committee to reduce weight of bread and bakery products, OPA has authorized producers, during the emergency period, to reduce the weight of loaves of bread and of sales units of bread type rolls up to 10% without a corresponding decrease in ceilings. Secretary of Agriculture Clinton P. Anderson on March 15 appealed to the governors of all states to take the necessary action to permit the sale of smaller loaves of bread. This appeal was made when it was learned that in many areas state and local regulations hindered the objectives of the Famine Emergency Committee in its efforts to conserve wheat for shipment abroad. Nineteen states and the District of Columbia, according to trade information quoted by OPA, have varying types of weight laws, as well as a number of municipalities. The following states require that loaves of bread weigh 1 lb. or 1½ lb. or multiples thereof: Arizona, California, Connecticut, District of Columbia, Massachusetts, Minnesota, Montana, Nebraska, North Dakota, Oregon, South Dakota, Texas, Washington, and Wisconsin. Indiana, Iowa and Michigan require that loaves weigh 12, 16, 20, or 24 oz. Delaware, Idaho and Ohio require loaves of bread to weigh 1 lb.

Anticipating a multitude of questions when housewives begin to "convert" to the new flour, Betty Crocker and her staff in the home service department of General Mills have tested the new flour in all types of baking. "The new flour will perform satisfactorily," she announced, "but repeated testings in our kitchens show that you can't expect as high a volume in your baked products or as fine a texture. As for eating quality, yeast breads are very good, though lower in volume. We get good results with pastry and cookies, acceptable results with cakes—with an adjusted method of mixing, and acceptable results with biscuit doughs with increased leavening. Therefore, to get best results certain adjustments in the recipes which were developed for standard white flour will be required." The new flour, it is pointed out, will not perform as well with certain fine cakes, such as angel food cake, sponge cake, or a delicate white or yellow cake. "Remember, it is a general purpose flour—with the resulting limitations because of the fixed 80% extraction." The new streamlined methods of cake mixing, such as the "Betty Crocker" method, are not recommended because they call for precision ingredients including the finest type of flour. Homemakers will do best to use only the simpler, plainer recipes such as those which will be found in the sacks of General Mills All America flour, which replaces Gold Medal.

A process developed by the Continental Baking Company, New York, said to result in a more uniform flour with better color and texture than would otherwise be possible, is being adopted by 25 mills, according to *Food Field Reporter*, March 18. This "straight line" process is a continuous operation, in contrast to other processes by which flour is milled at a 72% rate, and is later built up with coarser grain. A unique feature of the process, according to this account, is the milling of coarser parts of the wheat kernel along with that part previously milled for white flour, using special rollers and bolting cloth. The resultant flour is more uniform and less "specky" in color.

Tests of samples of the new flour in biscuit, muffin, and plain cake recipes, in family-size batches, made at BHNHE, gave generally acceptable results. The specialists suggest: (1) Follow your own recipe as usual, unless the manufacturer gives specific directions on the package for his particular flour; (2) if the dough or batter seems a little soft with the familiar recipe, try using a little less liquid and a bit more flour in the mixture. These are minor adjustments that some of the new flour may need if the products do not quite come up to the usual standards.

Food Intake of College Women[1]

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SINCE 1932 eleven studies have been made of the food intake of college women. Only four of these utilized weighing and analysis of the foods eaten. Of the remaining seven which are based on calculations, three used individual food records and four the inventory method. The time and expense involved in making chemical analyses of food consumed preclude the use of this method in the study of large groups of college women, except in conjunction with cooperative studies. In spite of the many possibilities of inaccurate deductions when food intake is based on calculated values alone, this study was undertaken in an effort to determine how the food consumption of these college women compared with those of other studies.

PROCEDURE

One hundred and six college women living at Oak Street Hall, whose ages ranged from 15 to 25 years inclusive (mean 18.2), served as subjects. The data were collected during two periods, covering 14 consecutive days each, February 14–28 and March 14–28. Saturdays and Sundays were included because Leverton and Marsh (1) previously had found that omitting data for these days resulted in a distorted estimate. The usual procedure in making an inventory dietary was used with suitable corrections for edible waste. The amount of food available to each student daily was calculated for calories, protein, calcium, iron, vitamin A, thiamin, riboflavin, and ascorbic acid values and compared with the National Research Council's recommended dietary allowances. The height and weight of each girl were obtained in the usual manner in order to compare these students with the college women observed in other studies.

DISCUSSION OF RESULTS

Records for the first 14-day period were completed by 93 students and for the second, by 94. The average daily food intake, calculated from the inventory for each period and compared with the recommended daily allowances of the National Research Council, is shown in Table 1. The calculated values for both periods exceed these allowances.

Using Coons and Schiefelbusch's weighed and analyzed caloric intake of southern college women as a standard (2) for our subjects, an excess of 18 and 19 per cent was supplied for the two periods. The other values ranged from 2.5 to 130 per cent in excess of the recommended allowances. Only two values, iron for the first period and ascorbic acid for the second, were less than 25 per cent in excess. Smith and Biltz (3) used a waste factor of 25 per cent in computing nutritive value estimates. The total edible waste in the present study was calculated to be 1.7 and 2.0 per cent per person for the first and second period, respectively. Consequently, it may be assumed that the calculated dietary of the present study satisfactorily provided for the college woman's needs since the recommended allowances also provide a safety factor.

TABLE 1

Average calculated daily food intake compared with recommended allowances

GROUP	CALORIES	PROTEIN	CALCIUM	IRON	VITAMIN A	THIAMIN	RIBOFLAVIN	ASCORBIC ACID
		gm.	*gm.*	*mg.*	*I.U.*	*mg.*	*mg.*	*mg.*
Period I	2446	94	1.45	18	7406	2.8	2.7	125
Period II	2410	99	1.37	22	8722	2.6	2.7	82
NRC allowances (Jan. 1943), girl 16–20 yr	2400	75	1.0	15	5000	1.2	1.8	80

A comparison of the height and weight of the college women in this study with those observed in previous studies indicates that the average height is greater and that the average weight is less (Table 2). Coons and Schiefelbusch (2) report the lowest average weight, 51.9 kg., as compared with 55.7 kg. for the present study. According to accepted standards, 17 per cent of the present group were more than

[1] Received for publication August 6, 1945.

TABLE 2

Mean values for height, weight, and caloric, protein, calcium, and iron intake of college women

AUTHOR	DATE OF PUBLICATION	SUBJECTS				CALORIC INTAKE		TOTAL INTAKE			METHOD OF STUDY	LENGTH OF PERIOD	PLACE OF STUDY
		No.	Age	Av. ht.	Av. wt.	Per day	Per kg.	Protein	Ca	Fe			
			yr.	*cm.*	*kg.*			*gm.*	*gm.*	*mg.*		*days*	
Coons and Schiefelbusch	1932	18	Col.	162	51.9	1990	38.0	56	.93		Weighed, analyzed	4–7	Oklahoma A. & M. Col.
Pittman *et al.*	1941	27	17–33		57.1	2038	35.7	71*	1.08*		Weighed, analyzed	7–10	Kansas State Col. and Ohio State Univ.
Leverton and Marsh	1942	69	16–27					59.2	.84	10.44	Weighed, analyzed	7	Univ. of Nebraska
McKay *et al.*	1942	124	Col.					63.12	.94		Weighed, analyzed	7–10	Univ. of Nebraska and Ohio State Col.
Hetler	1932	85	19–37		56.8	1700	29.9	58			Food records calculated	3–7	Univ. of Illinois
Morris and Bowers	1939	100	Col.		56.1	1805	32.2	60.71	.717	8.86	Food records calculated	7	Utah State Col.
Greenwood and Lonsinger	1941 & 1942	203	Col.	164.1†	58.4†	2016	34.1†	64.6	.829	10.34	Food records calculated	7	Oklahoma A. & M. Col.
Goddard *et al.* 1st period	1934	89	17–25	144.8–177.8	57.5	3699	64.3	91	.51	13	Inventory calculated	8	Univ. of Calif., Los Angeles
Goddard *et al.* 2nd period	1934	89	17–25	144.8–177.8	57.5	2501	43.5	75	.75	13	Inventory calculated	8	Univ. of Calif., Los Angeles
Wheeler and Malloy	1935	28	Col.	166.1	56.6	2397	42.3	70	.92	11.8	Inventory calculated		Vassar Col.
Donelson *et al.*	1940	1013	16–30	163.6	57.2								Kansas and Midwest
This study, 1st period	1945	93	15–25	167.2	55.7	2445	43.9	93.9	1.45	18.20	Inventory calculated	14	No. Texas State Teachers Col., Denton
This study, 2nd period	1945	94	15–25	167.2	55.7	2410	43.3	99.1	1.33	21.8	Inventory calculated	14	No. Texas State Teachers Col., Denton

* Calculated.

† Calculated on 132 women.

TABLE 3

Distribution of subjects as to generations

NO. OF GENERATIONS IN UNITED STATES	NO. OF WOMEN IN EACH CLASSIFICATION
2	7
3	13
4	54
5	22
6	3

TABLE 4

Relative cost of the various classes of food

FOOD GROUPS	FIRST PERIOD	SECOND PERIOD	STANDARD
	%	%	%
Dairy products	14.7	17.9	20
Cereals	7.7	7.8	20
Fruits and vegetables	33.1	26.3	20
Fats and sugars	11.2	10.4	20
Eggs, cheese and meats	31.0	35.2	20
Adjuncts	2.1	2.4	

10 per cent underweight and 5 per cent were more than 10 per cent overweight.

Nationality does not seem to be the chief contributing factor since only seven of the women represented the second generation in the United States, whereas 54, or 50 per cent, represented the fourth

generation. In fact, the families of three fourths of the women had been in this country for three or more generations (Table 3).

Of the women represented, 10 per cent reported parents of the same nationality, either English, French, Irish, German, or Dutch. The most frequently occurring combination was Scotch-Irish, which was reported by 19 per cent of the women; whereas Scotch-Irish in combination with French, Dutch, German, Indian, etc., represented 31 per cent of the students. English combined with one other nationality represented the ancestry of 23.5 per cent of the students. The nationalities combined with English were in descending order—German, Dutch, French, Scotch, Indian, and Irish.

Regular classroom procedure has shown that the majority of the instances of underweight and many of the instances of overweight in these college women are due to the fact that they have smaller or larger bones than the average.

The calculated caloric intake is greater than that reported for weighed and analyzed diets by others (2, 4). The total protein intake is the highest recorded. Approximately 50 per cent for each period was derived from animal tissue or products. Both the calcium and iron values greatly exceeded those reported in other calculated studies.

Table 4 shows how the food dollar was spent during each of the periods of study. Gillett (5) recommends that a fifth of the food dollar be spent on each of the food groups. The reason for the high total protein, calcium and iron values obtained in our calculations is indicated by the amount of the food dollar spent for dairy products, eggs, cheese, and meat each period—45.7 and 53.1 per cent, respectively. Likewise, the lower caloric value of these diets results from the small percentage of the food dollar spent on cereal, fat, and sugar and the higher percentage spent on fruit and vegetables. The records show that when prepared cereals were served at breakfast, 89 and 94 per cent of the women ate these, but when left to the student's order only 1 to 4 per cent requested them. Fifty per cent drank milk in preference to coffee at breakfast, while 70 per cent drank milk at both lunch and dinner. Approximately 81 per cent ate breakfast regularly.

SUMMARY

The 106 college women of this study are taller and lighter in weight for age than those previously reported.

The high protein, calcium and iron values of each period are attributed to the relatively high proportions of the food dollar spent for eggs, cheese, meat and dairy products, namely 46 and 53 per cent for the two 14-day periods, respectively.

College students eat prepared cereals when they are placed before them, but they will not order them.

Seventy per cent of these women drank milk at both the noon and night meal.

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Britain's Wartime Diet

Throughout the war we have always had in mind the nutritional security that a diet based on long extraction bread, potatoes and mixed vegetables will provide. This aspect of our nutrition problems has often brought up the question of man's minimum need for animal protein and for fat. Unfortunately, our wartime experience has left this question unanswered, so far as the purely nutritional aspect is concerned. I, personally, do not think we shall ever agree on a figure for animal proteins, but I hope before long we shall be able to derive from the brilliant studies of such investigators as Professor W. C. Rose and Professor H. H. Mitchell, estimates of the need of the body for individual essential amino-acids. As for fat, we are still a long way from having a picture of its function in the human diet.

But in another direction our wartime experience has thrown light on the animal protein and fat problem. For people accustomed to the sort of food we eat in normal times there are minimums for both foods below which it becomes very difficult to provide palatable meals. When the housewife has so little meat, fish, eggs and cheese, from the rations, that they provide only about 25 gm. of animal protein daily and when the fat ration is less than 1 oz. a day, the family is obliged to eat meals that are dull and unappetizing. That is a fact no less important than are the purely nutritional considerations. Indeed, in my experience, these psychological aspects are frequently more important than are the physiological.

In the early stages of the war we were under considerable pressure, from various directions, to enrich foods with vitamins and to produce or obtain large stocks to be distributed as tablets or in capsules when occasion arose. Our analysis of the situation showed, however, that if we could give the public a nutritious bread and if we could considerably increase the production and consumption of potatoes and vegetables of high vitamin A content, there should be no fear of vitamin deficiency. All but two vitamin projects were accordingly rejected. Vitamins A and D were added to margarine, so as to make it and butter equivalent nutritionally, and interchangeable if necessary, in the ration. Stocks of ascorbic acid were acquired under lend-lease and were laid down against the contingency that the potato crop might fail and cause a general deficiency of vitamin C.—*Drummond, J.: Some Recent Developments in Human Feeding. Food Industries 18:327, 1946.*

Ascorbic Acid Content of Lunches Served at School[1]

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THE school lunch is recognized as a major factor contributing to the nutritional well-being of children. Frequently it is the one substantial meal of the day that the child receives. In the normal diet, breakfast is usually considered as providing the major portion of the day's requirement for vitamin C, but many children go to school without breakfast or with a very inadequate meal. For these reasons the school lunch should contribute a liberal portion of the day's requirement for this vitamin. Scoular and Bryan (1) have reported that school lunches in a Texas school supplied from 0.67 to 83.96 mg. ascorbic acid daily; the latter high value occurred only on those days when an orange was served for dessert. English workers report values for the school lunch of 4.2 to 28.8 mg. (2) and 0.9 to 29.6 mg., increasing to 29 to 79 mg. per meal in July when new potatoes were available (3).

The present investigation was concerned with the vitamin C content of lunches served to children in the elementary and high schools of Tuscaloosa, Alabama.

EXPERIMENTAL

Descriptions of Lunchrooms and Collection of Food. Food was collected from 7 city schools and 2 county schools on 4 consecutive days in each school during February and March 1945 and again in April and May, representing late winter and spring food supplies. All schools were participating in the War Food Administration program, and plate lunches were served. A lunchroom supervisor was responsible for all the lunchrooms except in schools F and I (Table 1). In each kitchen, vegetables for salads were hand-chopped or grated; other vegetables were cooked on the top of the stove, and baking was done in a gas oven.

Two plates of food as served were collected at the beginning and two more at the end of the serving period, and each food portion containing any vegetable or fruit was divided exactly in two on a balance. One portion was taken for moisture analysis; the other was placed immediately in a jar containing 200 ml. one per cent metaphosphoric acid.

Analysis was made of a composite of each plate, not of individual foods. This procedure saves time, permits a sampling of more plates, and gives values in terms of what the child actually consumed. Food samples were taken to the laboratory and analyzed immediately.

Ascorbic Acid Determinations. Foods were thoroughly mixed and macerated in a Waring Blendor and a portion of the filtrate was taken for determination of reduced ascorbic acid according to the method of Loeffler and Ponting (4) and by means of a Coleman spectrophotometer. A portion of the filtrate was analyzed for dehydroascorbic acid by the method of Roe and Oesterling (5). One half pint bottle of milk was taken daily and analyzed separately for both total and dehydroascorbic acid (5).

RESULTS AND DISCUSSION

All schools were served the same menu on the same day with possible changes of the vegetable if sufficient quantities of any one specified vegetable were unobtainable. Menus presented in Table 2 for one elementary school for two different 4-day periods were typical of those served for all schools. Ascorbic acid values for milk are not included in Table 2, but at all schools each child received one half pint of milk.

No consistent difference was obtained between the ascorbic acid content per plate at the beginning and the end of the serving period. This does not mean that there was no loss of ascorbic acid in food held on the stove or steam table during the serving period (such losses have been repeatedly demonstrated by other investigators). Portions were not standard-

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ized, and the fact that the ascorbic acid content was the same, or even higher for some plates at the end of the period, was probably the result of larger servings of vegetable or fruit on the plates served last.

The ascorbic acid content of the lunches varied greatly from day to day, as is shown in Table 2. Each value represents an average based on analyses of two plates of food. The ascorbic acid content of the plates served, even when two menus were similar, frequently differed greatly. This is explained in part, at least, by the difference in size of portions served. In some cases vegetable portions were very small, and consequently the ascorbic acid value of the lunch was low.

Contribution of Different Menus to Ascorbic Acid Intake. Each of the menus which provided the highest intakes of ascorbic acid included some citrus fruit. The four highest intakes of total ascorbic acid were obtained from the following menus: School I, vegetable soup, tuna fish sandwich with lettuce, rolls, whole orange, milk, 87.96 mg. ascorbic acid; School H, hot roast beef sandwich, glazed sweet potatoes, buttered cabbage, rolls, one half orange, milk, 83.57 mg.; School C, hot roast beef sandwich, glazed sweet potato, peas and carrots, roll, one half orange, milk, 47.67 mg.; School H, spaghetti, beets, buttered cabbage, rolls, cup cake, one half orange, milk, 43.39 mg. ascorbic acid.

The four lowest intakes of total ascorbic acid were obtained from the following menus: School A, spaghetti, egg salad, pickled beets, whole wheat rolls, cup cake, milk, 3.75 mg.; School B, ground ham sandwich, mashed potatoes, canned string beans, shredded lettuce, rolls, ice cream, milk, 4.75 mg.; School H, meat patties, rice, lettuce and pickle salad, turnip greens, rolls, doughnuts, milk, 4.81 mg.; School A, meat pie, peanut butter sandwich, shredded lettuce, roll, chocolate cake, milk, 5.05 mg. ascorbic acid.

TABLE 1

Description of schools and serving time

SCHOOL	ENROLMENT	NUMBER SERVED IN LUNCHROOM	PERIOD OF FOOD SERVICE
Elementary A	515	340	1 hr. 40 min.
" B	416	300	1 hr. 20 min.
" C*	219	144	45 min.
" D**	211	134	45 min.
" E**	216	93	1 hr.
" F	440	400	1 hr. 10 min.
Junior High G	577	340	1 hr.
Senior High H	601	367	1 hr.
" " I	850	475	1 hr. 30 min.

* Food was prepared at B, transported to C, and served 45 min. later.

** Food was prepared at H, transported, and served at D 30 min. later and at E 45 min. later.

TABLE 2

Typical menu from one elementary school, and ascorbic acid values per plate at beginning and end of serving period (March 5–8, May 14–17, 1945)*

MENU	BEGINNING OF SERVING PERIOD			END OF SERVING PERIOD		
	Reduced	Dehydro	Total	Reduced	Dehydro	Total
	mg.	*mg.*	*mg.*	*mg.*	*mg.*	*mg.*
Ground ham sandwich Mashed potatoes String beans (canned) Chopped lettuce Roll Ice cream	1.02	0.91	1.93	0.61	1.59	2.20
Baked hash, pickle Turnip greens Roll Jello, custard sauce Cookie	5.98	3.74	9.72	3.15	2.23	5.38
Buttered egg Canned peas Carrot sticks Baked potato Roll	3.97	4.65	8.62	5.98	3.13	9.11
Hot beef sandwich Candied sweet potato Black-eye peas (dried) Cabbage and apple salad Roll	20.43	2.75	23.18	18.63	3.45	22.08
Buttered egg Mashed potatoes Green Lima beans Tomato salad Roll, cup cake	8.00	2.38	10.38	12.61	7.18	19.79
Roast beef, rice Black-eye peas (dried) Slaw and tomato Roll Orange (one half)	31.17	4.95	36.12	25.73	4.33	30.06
Spaghetti and ham Beets Cooked cabbage Ice cream	12.85	1.11	13.96	14.15	0.55	14.70
Meat pie and vegetables Spinach Pickle, roll Plum prunes, cookie	5.61	1.99	7.60	10.11	2.84	12.95

* One half pint milk was provided for each child; values for milk are given in Table 4.

Menus which supplied between 25 and 40 mg. total ascorbic acid contained (a) turnip greens and sliced tomato, (b) turnip greens and slaw, (c) turnip greens,

and apple and cabbage salad, (d) spinach, and cabbage and tomato salad.

Adequacy of Ascorbic Acid Intake. The average daily intakes over two different 4-day periods for each school are given in Table 3 and represent values for 55 different lunches and analyses of 212 separate plates of food. Average totals and daily range of values are shown. If the school lunch is to supply at least one third the daily recommended allowance of nutrients, each lunch should contain 25 mg. ascorbic acid or one third the National Research Council recommendation for children 10 to 12 years of age (6). Only one elementary school, C, met this level of vitamin C intake. For high school boys and girls one third the recommended allowance is 27 to 30 mg., and was met by two schools, H and I.

The importance of the ascorbic acid content of the school lunch is further emphasized when it is realized that many children have little or no breakfast before starting for school, therefore they may miss the one meal at home when fruit or fruit juice is most likely to be served.

Presence of Dehydroascorbic Acid. The unreliability of the determination of dehydroascorbic acid by the hydrogen sulfide reduction method (7) has led to the frequent practice of reporting only the values for the material that reduces 2,6 dichlorobenzenone-indophenol in 15 seconds.

A few papers recently have emphasized the importance of determining dehydroascorbic acid (8–10). The newer method of analysis developed by Roe and Oesterling (5) makes it possible to measure dehydroascorbic acid with a high degree of accuracy. By this method in our laboratory the average recovery of dehydroascorbic acid added to extracts of food composites was 101 per cent for 11 determinations with a range of 95 to 111 per cent.

There was an appreciable amount of dehydroascorbic acid present in each food sample (*see* Tables 2 and 3); 19 to 45 per cent of the total ascorbic acid

TABLE 3

Average values for reduced, dehydro and total ascorbic acid per plate lunch for a week at each of 9 different schools

SCHOOL	DATE 1945	BEGINNING SERVING PERIOD			END SERVING PERIOD			PLATE PLUS ½ PINT MILK			PER CENT OF TOTAL ASCORBIC ACID IN DEHYDRO FORM
		Reduced	Dehydro	Total	Reduced	Dehydro	Total	Reduced	Dehydro	Total and range	
		mg.	*mg.*	*mg.*	*mg.*	*mg.*	*mg.*	*mg.*	*mg.*	*mg.*	
Elementary A	2/23–3/1	6.32	2.13	8.45	6.49	3.63	10.12	6.87	3.95	10.82 (5.05–15.86)	37
	5/7 –10	15.44	3.50	18.94	16.93	4.03	20.96	16.82	5.91	22.73 (3.75–40.19)	26
" B	3/5 – 8	7.85	3.01	10.86	7.09	2.60	9.69	8.75	4.22	12.97 (4.75–25.32)	33
	5/14–17	14.41	2.61	17.02	15.65	3.73	19.38	15.40	4.75	20.15 (12.23–35.05)	23
" C	3/12–15	20.62	6.04	26.66	18.34	4.49	22.83	20.19	6.72	26.91 (8.65–47.67)	25
	5/18–21	11.85	5.08	16.66	12.19	5.37	17.56	16.36	8.80	25.16 (23.69–26.47)	35
" D	4/9 –12	6.28	3.77	10.05	Short serving period			6.78	4.32	11.10 (9.56–12.43)	39
" E	4/16–19	12.68	5.54	18.22	12.13	5.34	17.47	13.10	6.65	19.75 (7.57–37.31)	34
" F	3/19–22	9.64	3.99	13.63	15.88	7.37	23.25	13.28	7.32	20.60 (14.97–25.67)	20
Junior High G	2/12–15	3.51	3.66	7.17	6.03	2.64	8.67	5.07	4.20	9.27 (4.81–19.97)	45
	4/23–26	9.19	4.62	13.81	10.51	4.10	14.61	10.15	5.40	15.55 (13.17–17.79)	35
Senior High H	2/19–22	22.90	5.30	28.20	22.62	4.46	27.07	23.48	6.50	29.98 (9.88–83.57)	22
	4/30–5/3	17.59	5.83	23.42	18.87	5.84	24.71	19.12	7.41	26.53 (10.52–43.34)	28
" " I	4/ 2– 5	31.73	7.22	38.95	32.16	6.85	39.01	32.48	7.70	40.18 (14.51–87.96)	19
Average for all schools		13.80	4.53	18.32	14.63	4.37	19.30	14.82	5.94	20.76	29

TABLE 4

Ascorbic acid content of 51 samples of pasteurized milk

	REDUCED	DEHYDRO	TOTAL
	mg./half pint	*mg./half pint*	*mg./half pint*
Mean	0.61	1.38	2.01
Standard error	0.059	0.095	0.104
Range	0.0–1.71	0.0–2.85	0.57–3.49

was present in this form. Values for dehydroascorbic acid ranged from 2.06 to 13.34 mg. per lunch. The composite sample method of analysis gives no indication which foods, and whether cooked or raw foods or both, were the source of the dehydroascorbic acid.

Pasteurized Milk as a Source of Ascorbic Acid. Ascorbic acid was present in the milk in greater proportion in the dehydro than in the reduced form. For 51 samples of pasteurized milk, the average total ascorbic acid content was 2.01 mg. per half pint; 1.38 mg. was in the dehydro form (Table 4). Thus the contribution of milk to the ascorbic acid content of the diet is almost negligible. Expressed on a basis of 100 ml., these values are 0.86 mg. total ascorbic acid and 0.59 mg. dehydroascorbic acid. Reports of other investigators for pasteurized milk are 1.26 mg. total ascorbic acid and 0.35 mg. (range 0.11–0.88) dehydroascorbic acid (11). The content of reduced ascorbic acid was 0.26 mg. per half pint in the present study as compared with 0.242 mg. reported by Scoular and Bryan (1).

These analyses emphasize the importance of making determinations of dehydroascorbic acid when reporting values for the ascorbic acid content of foods. It is possible that the loss of ascorbic acid reported for foods which have been held for some considerable time after preparation may be partially explained at least by conversion to dehydroascorbic acid. This point needs further investigation as does the question of the extent to which dehydroascorbic acid is utilized by the human body. Experiments with guinea-pigs have led to reports that dehydroascorbic acid is utilized 25 per cent (12), 80 per cent (13) and practically the same as reduced (14). Borsook and co-workers (15) reported 100 per cent utilization of dehydroascorbic acid by humans when administered orally.

SUMMARY

The total, reduced and dehydroascorbic acid content of school lunches served in 6 elementary and 3 high schools was determined in late winter and again in the spring, each for 4-day periods.

The average total ascorbic acid content of the plate lunch plus one half pint milk, for all schools, as determined from 55 different lunch menus and analyses of 212 plates was 20.76 mg. with a daily average range of 9.27 to 40.18 mg. for different schools.

Only 3 of the 9 schools served lunches with a daily average ascorbic acid content equal to one third the National Research Council recommended allowance.

It is essential that the possibility of the presence of dehydroascorbic acid be taken into consideration in any determination of the ascorbic acid content of foods. From 19 to 45 per cent of the average daily ascorbic acid content of the school lunches analyzed was in the dehydro form.

One half pint milk contributes a negligible amount of ascorbic acid to the intake obtained from the school lunch; 2.01 mg. total ascorbic acid was the average content of 51 samples, and 68 per cent of this was in the dehydro form.

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Study of Food Selection at the Western Union Cafeteria, New York[1]

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THE following survey in the Western Union Cafeteria, New York, was conducted in order to determine the selection of foods during the dinner hour by Western Union employees. Employees at the main building are of both sexes, their ages ranging from 16 to 70 years. Their occupations vary from sedentary (telegraph operators and clerks) to active (porters and mechanics). Menus at the cafeteria are such that well-balanced meals can be selected. Some nutrition education was provided a few years ago in the form of posters, literature, and lectures.

METHODS OF STUDY

This study consisted of evaluating 100 trays per day for 20 days, or a total of 2000 during the dinner hour—5:15 to 7:45 p.m. The period extended from November 1, 1944 through January 25, 1945. Employees have a half-hour meal period and two 15-minute relief periods, as well as a 15-minute relief period for every 2 hours overtime. Though 5:15 to 7:45 p.m. is normally a dinner hour, some persons are on a short relief at that time and may choose a snack, rather than a complete meal. Therefore the trays were classified as "meal trays" and "snacks"—1600 of the former and 400 of the latter. A snack was defined as including one or all of the following: beverage, pastry, fruit, juice, soup, whole grain or enriched bread.

In order to check the validity of the data collected by spot checking the trays, the consumption of two of the foods, milk and pastry, was also determined by dividing the total amount of each that was consumed during a 24-hour period by the number of customers—8000 at the time. This was repeated for 5 days.

All data collected were judged on the basis of the recommendation (1) that any meal served in the plant should contribute at least one third of the daily requirements.

The food trays were analyzed in two ways: by scoring, based on established standards; and by checking for the selection of certain specific foods.

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1. The meals were scored *good*, *fair*, and *poor*, based on the procedure used by Elizabeth Jensen of the Hartford Nutrition Committee (2) in her survey of a New England industrial plant, in which requirement for a good meal was based on the following:
   (a) Milk, cheese or food made from milk.
   (b) Fruit or vegetable.
   (c) A substantial dish.

A fair meal failed in one of the requirements: a poor meal lacked two or more of the requirements.

In the present study, a meal was graded as lacking in requirement (b) if potato was the only vegetable and the meal contained no fruit or juice. A substantial dish consisted of meat, fish, eggs, *or* spaghetti or noodles with meat. Because of the speed with which employees passed the checker, the sandwich filling could not be noted. However, upon analysis it was found that a knowledge of the sandwich content would not have changed the scoring, because in most cases the sandwich met requirement (c) only.

The snacks were scored good and poor, based on the recommendation of the National Nutrition Conference (3) that between-meal feedings should include milk, fruit and tomato juices and other foods that include the necessary nutrients. In this study a snack was scored good if it contained one or more of the following foods: milk or "milk food" (pudding or ice cream), fruit or tomato juices, fruit, soup and whole grain or enriched bread.

2. The trays were checked for the selection of the following groups of foods:
   (a) Protein (meat, fish, eggs, cheese in amounts equivalent to an adequate portion).
   (b) White potato (including potato salad).
   (c) Green or yellow vegetables (including sweet potato).
   (d) Vegetables other than green or yellow (including cabbage and lettuce).
   (e) Salads (except potato salad).
   (f) Bread (whole grain or enriched) and butter (including sandwiches).
   (g) Sandwiches.
   (h) Fruits and juices (fruit pie was considered equal to one portion of fruit).
   (i) Milk (sweet, buttermilk, and chocolate drink).

(j) Puddings and ice cream.
(k) Beverages other than milk (coffee, tea, postum, and hot chocolate).
(l) Soup.
(m) Pastry.

Vegetables are such an important food that their selection by the employees was further analyzed to determine the number and kinds that each person chose, if any.

RESULTS OF THE STUDY

1. The results of the study showed that most of the employees chose fair meals. Selection was as follows:

Good	13%
Fair	62%
Poor	25%

More than half the employees chose "good" between-meal snacks. Selection was as follows:

Good	59%
Poor	41%

TABLE 1

Distribution of foods as selected, based on 1600 meals

FOOD CLASS	NO. OF TIMES FOOD WAS CHOSEN
	%
Protein	71
White potato	33*
Green or yellow vegetable	47
Other vegetables	18
Salad	10
Salad as only vegetable	4
Sandwich	17
Bread and butter	30
Butter only	1
Bread only	7
Bread, including sandwiches	54

* Included potato in stew, shepherd's pie and similar combinations.

2. The information about the various groups of foods chosen is tabulated in Tables 1, 2, and 3. The percentages for milk and pastry consumption obtained from the 24-hour period checked very well with those arrived at from the spot checking of trays. In fact, for both methods of determining pastry consumption the same figure was arrived at—46 per cent.

As was explained in the outline of the procedure used in this study, the sandwich filling was not included in the analysis of the meal trays. However, in a discussion of the results, consideration should be given to the protein—meat, cheese, eggs, fish, and peanut butter—used in the sandwiches. Most of the sandwiches contained these protein foods, which raised the consumption considerably. Some of the sandwiches also contained tomato which added slightly to the total vegetable intake.

Vegetable consumption was fair. Although 34 per cent of the employees had no vegetable with their meals, those who did choose vegetables frequently chose more than one, one of which frequently was green or yellow.

Western Union employees do not drink sufficient milk. Only 20 per cent of them had milk with their meals.[2] This is true of the majority of industrial workers. Dr. Hart (2) found, after inspecting the

TABLE 2

Distribution of specific foods as selected, based on 2000 trays

FOOD CLASS	NO. OF TIMES FOOD WAS CHOSEN
	%
Fruits and juices	17
Fruits, juices, and fruit pies	28
Milk	20*
Puddings and ice cream	9
Other beverages	67
Soup	9
Pastry, including fruit pies	46
Pastry, excluding fruit pies	34

* Milk consumption, arrived at by totaling the 24-hour intake of 8000 employees, was 22%. The difference in the percentages obtained by the two methods can be accounted for by the fact that some take milk in addition to or in place of the cream served with coffee. This milk was not included in spot checking the trays.

TABLE 3

Distribution of vegetables as selected, based on 1600 meals

VEGETABLES PER MEAL	NUMBER OF PERSONS
	%
One, excluding potato	25*
Potato as the only vegetable	10
One	35
Two, including a green or yellow vegetable	20
Two, other than green or yellow	5
Three	2
Four	0.01**
One or more	62
One or more, excluding potato as the only vegetable	52
One or more, including a salad as a vegetable	66†

* All figures include potato except where specified.
** Two persons.
† This figure shows that 34% of the employees had no vegetable or salad with their meals.

[2] Milk consumption was again checked in November 1945 at which time 43 per cent of the employees selected milk. This increase may be attributed to two factors: the weather was warmer and the number of younger employees had increased.

lunches of workers in 33 large industrial concerns, that the percentage of employees taking milk ranged from 10 to 25 per cent. However, milk consumption at the Eastman Kodak Company (4) where 55 per cent of the employees selected milk, is quite superior to that observed at Western Union.

The results of surveys made at the Westinghouse, Bloomfield, N. J., and Walter Kidde Plant No. 3 (5) were similar to the findings of this study at Western Union. A study (4) of the meals at the Eastman Kodak Company, Rochester, N. Y., indicated that selection of meals at that plant is somewhat superior to that observed at the Western Union cafeteria in New York. The lunches of the office workers and factory workers which Miss Jensen inspected (2) were also somewhat better than those of Western Union. However, the food selection of the Western Union employees, on the whole, is better than that of employees at many industrial plants. Dr. Hart (2), after inspecting the lunches of workers in the concerns mentioned previously, found that the majority chose poorly balanced meals, even when opportunity for a good choice was available.

CONCLUSIONS

The following conclusions can be drawn as a result of a study of lunches selected by employees at Western Union. Protein intake is adequate; vegetable consumption is fairly good but needs to be increased; there is urgent need for increased consumption of fruits, juices, salads, milk, bread and butter.

This study is merely an indication of the food habits of one shift of Western Union employees. In order to acquire a more complete view of the food selection, a study of all three shifts, covering 24 hours, is necessary.

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BRITAIN'S HEALTH RECORD

We have tried to keep a check on the state of health of the people during the war period. Dietary surveys are conducted in representative areas every month in order to ascertain the trend of consumption, the nutritive value of the food eaten and the prices paid for it. The results of these monthly surveys are reassuring. They reflect the equitable distribution of essential foods. There is, for example, a negligible difference between the nutritive values of the food eaten by the low and by the middle income groups. They also show that expenditure on food is being well balanced in respect to the controlled cost-of-living index.

Then we have clinical surveys to examine the nutritional conditions of the people. Again we concentrate our attention on the low income groups because, if we find them well, there is no cause for anxiety about those who are better off. These surveys have revealed a state of affairs that is generally satisfactory. Vitamin deficiency conditions are rarely encountered, anemia appears to be less common than before the war, children's development may be better, but is at least as good as it was in 1939 and the condition of their teeth is improving.

Our most encouraging evidence of well-being under wartime conditions comes from our vital statistics. All show marked improvement since 1941, which marks the point where many of the special measures began to operate. Maternal mortality has dropped to the lowest figure on record, 2.3 per 1000 births; infant mortality has also touched a record low figure. The birth rate is rising sharply after falling steadily for many years past, and the death rate is less than it was five years ago.—*Drummond, J.: Some Recent Developments in Human Feeding. Food Industries 18:327, 1946.*

Sources of Principal Nutrients in the Diet of a North Carolina Village Population[1]

D. F. MILAM, M.D.,[2] and MARY PARKS BELL[3]

IT IS a matter of considerable dietetic interest to learn how the daily needs of the several known essential nutrients are made up from the various items of the diet of any individual or group of individuals. What do people really eat, and how do these foods make up the daily requirements of each essential? To what extent do the "basic 7" food groups serve as a guide? The chief sources of any specific nutrient in the dietary may not always be the best or richest source of the nutrient. It is of interest, therefore, to have definite information on the chief sources of the nutrients in the diet of a normal group of people who are living in their home environment and engaged in their daily work, and who, presumably, are on their usual dietary intake. It would be desirable if this type of data could be obtained for the several regions or sections of the country. It was possible to obtain this kind of information concerning the 232 individuals included in that part of the nutrition survey of North Carolina carried out in the fall of 1944 and the winter of 1945 (October 15 to April 15) in Orange County. It is presented in detail, as being of interest to those concerned with our local, national, or international nutrition problems.

PROCEDURE

A diet record was made for each member of the family (that for children by a parent) on each day during a period of a week. The record included the kind and amount of each food consumed at each meal and between meals. The nutritionist visited the home frequently during the week of the recording, maintaining friendly relations with the family and thus ensuring cooperation. The survey also included a medical history, a clinic examination, and the laboratory analysis of a blood sample from each individual.

The records, when completed by the family, were summarized; the nutrients were calculated from food tables and these together with the amount of each food eaten were entered on hand-punch cards specially designed for the purpose. Space for 45 items was provided, and few groupings were used. The amount of each food was calculated in grams. An average amount consumed by a group was obtained by adding the individual amounts taken and dividing the sum by the number of individuals in the group. The average was further divided by seven to obtain figures on consumption per day.

Data for 232 white persons examined during the 6 months of the survey were assembled and analyzed. The groups studied were as follows: preschool children (under 5 yr.)—14 boys and 9 girls; school children (5 to 14 yr.)—35 boys and 39 girls; adults (15 yr. and over)—43 men and 92 women. The community surveyed divided itself naturally into two economic groups (mill town and village) with a rather definite line separating the two areas.

RESULTS AND DISCUSSION

In Table 1, pertaining to the 43 adult males, the findings are set forth for each of the nutrients (5 vitamins, 2 minerals, protein, and calories).

The following discussion is concerned with the relative importance of the foods contributing to each essential nutrient in the 6 population groups observed. The vitamins are discussed first, then the 2 minerals, and finally the protein and calories. Detailed data on the chief sources are given only for the groups of men and women over 15 years of age.

Our calculations show that approximately 85 per cent of the amount of each nutrient consumed was derived from 10 sources. Fat intake in this village was approximately 33 per cent of total calories, a much lower figure than that found in previous surveys in this state, probably due in part to rationing procedures. Protein calories were 15 per cent of the total, a slightly higher figure than that obtained in previous surveys.

Vitamin C intake often serves as a good index of the consumption of the protective vegetable foods. Citrus fruit was the principal source of vitamin C for all groups in this survey, contributing 30 to 40 per cent of the total for adults and more than 50 per cent for children. The average adult intake of orange

[1] Received for publication November 13, 1945. Observations on which this paper is based were a joint activity of the North Carolina State Board of Health, Duke University School of Medicine, and the International Health Division of The Rockefeller Foundation.

[2] International Health Division, Rockefeller Foundation.
[3] North Carolina State Board of Health.

TABLE 1

Percentage distribution of foods, with respect to nutrient content, consumed by 43 white males 15 years of age and over

	CALORIES	PROTEIN	CALCIUM	IRON	VITAMINS				
					A	C	B_1	Riboflavin	Niacin
Bread, enriched	20.2	12.8	5.4	11.5			18.4	5.5	14.4
Bread, refined		5.2	4.0	1.6			.4	2.2	3.7
Milk	13.2	15.5	54.7	4.9	13.0	12.9	13.2	47.4	3.8
Cakes, pies	10.0	3.5	2.4	2.5			1.0		
Peas, dried	9.0	3.1	1.1	4.1			19.0	2.1	1.8
Beans, dried		11.3	6.5	24.4					6.5
Cereal, whole	6.4	2.5	1.1	3.8			4.3	1.8	4.6
Cereal, refined		1.7	.3	2.7					1.8
Pork, lean*	4.1	7.6	.5	6.5			13.4	3.2	14.0
Eggs	4.0	9.0	3.9	10.1	13.0		5.3	11.1	.6
Sweets, other	3.8								
Pork (med.)**	3.2	3.6		1.1			2.1		6.2
Butter	3.2	.1	.2		5.8				
Fats, other†	2.8								
Beef	2.0	5.4	.2	2.7	.1		1.5	1.8	7.7
Fruits, dried	.6	.1	.2	.6	.6		.4	.6	.4
Potato, white	1.8	1.1	.7	2.7	.3	7.1	2.9	1.3	4.5
Corn bread	1.7	1.0	.1	.6			.8	.3	.4
Meats, other	1.0	1.8	.3	3.0					2.5
Vegetables, green, leafy	.2	.6	5.0	2.7	29.5	7.1	1.3	5.4	.6
Potato, sweet	1.7	.8	.7	1.1	12.5	5.0	2.0	1.6	3.4
Peaches	1.4	.1	.4	.3	5.6	2.9	.6	.7	.7
Cheese	.9	1.7	5.7	.6	2.6		.1	1.6	.1
Vegetables, other green	.4	.5	1.4	1.4	2.5	11.4	.9	1.8	1.4
Vegetables, yellow	.1		.1		1.5		.2	.2	.2
Fruit, citrus	1.0	.5	1.0	.8	1.2	31.4	2.4	1.1	1.6
Peanuts	1.1	1.3	.3		.1		2.6		4.6
Organ meats	.2	.8	.1	1.6	4.1		1.0	4.2	3.2
Fowl	.6	2.3	.2	1.4				.6	4.3
Tomato	.3	.5	.3	.8	4.1	12.1	1.9	1.1	1.8
Turnips	.1	.1	.5	.3		3.7		.3	.2
Apples	1.0		.2	.3	.2	2.9	.4		.9
Peas, fresh	.5	1.0	.3	1.4	.8		1.9	1.4	.6
Berries	.2		.1	.3	.2	1.4	.1		
Soup	1.1	1.3	.7	.6	1.1	1.4	.2	.7	
Corn	.3	.2	.1			.7	.4		.3
Total	98.1	97.0	98.7	96.4	98.8	100	98.7	98.0	96.8

* Pork chops and ham.

** Sausage, barbecue and ham.

† Mayonnaise, salad dressings and gravies.

juice was 20 cc. in the mill village and 60 cc. in the town. The difference in cost could account for this. The 7 foods making the largest contribution to the vitamin C content of the diet of men and women were as follows:

Food	*Percentage of vitamin C contribution*	
	Men	*Women*
Citrus fruit	31.4	38.7
Milk	12.9	8.4
Tomatoes	12.1	9.2
Other green vegetables	11.4	11.8
Green leafy vegetables	7.1	9.2
White potatoes	7.1	7.6
Sweet potatoes	5.0	3.4
	87.0	88.3

The order of importance varies somewhat between the sexes but the total contribution is similar. Among school children milk held second place. Consumption of green leafy vegetables was twice as high in the mill village as in the town proper, while milk consumption was about equal in the two communities.

Vitamin A. Milk was a main source of vitamin A for all groups except women, among whom consumption was definitely low. Contributions to the vitamin A content of the diet of adults were as follows:

Food	Percentage of vitamin A contribution	
	Men	Women
Green leafy vegetables	29.5	40.1
Eggs	13.0	11.0
Milk	13.0	8.2
Sweet potatoes	12.5	8.3
Butter	5.8	5.6
Peaches	5.6	4.1
Organ meats	4.1	5.6
Tomatoes	4.1	3.1
	87.6	86.0

Green leafy vegetables were a notably large source of vitamin A for women. Eggs ranked second for all groups except boys, with sweet potatoes fourth in importance for men, boys, and preschool girls. Peaches were the chief canned fruit of the diet. For women, organ meats contributed as much of the vitamin as butter.

Thiamin. Dried peas and beans were the highest contributors of thiamin in the diets of boys, girls, and adults, while milk took first place among preschool children. The order of importance of the food sources for adults is given below:

Food	Percentage of thiamin contribution	
	Men	Women
Dried peas and beans	19.0	20.2
Enriched bread	18.4	15.0
Lean pork	13.4	15.1
Milk	13.2	9.6
Eggs	5.3	5.2
Whole cereal	4.3	6.2
	73.6	71.3

Whole cereals held third place for preschool children.

Riboflavin. Milk contributed the largest amount of riboflavin to the diets of all 6 groups, with eggs ranking second. Whole cereals were among the top 5 sources for children but not for adults. The 6 foods making the largest contribution to the diets of men and women were as follows:

Food	Percentage of riboflavin contribution	
	Men	Women
Milk	47.4	36.9
Eggs	11.1	11.4
Enriched bread	5.5	4.8
Green leafy vegetables	5.4	7.6
Organ meats	4.2	7.1
Lean pork	3.2	3.8
	76.8	71.6

Women in this community drank less milk, with the result that a smaller proportion of each nutrient was derived from this source. Since the tables are on a percentage basis a deficiency in one item must be compensated for by larger proportions of other items.

Niacin. There was more variation in the order of importance of the niacin-containing foods from group to group than has been observed so far. Also this nutrient is more widely distributed among the foods consumed. The following 10 foods contributed only about 70 per cent of the total amount consumed daily by the men and women in this population:

Food	Percentage of niacin contribution	
	Men	Women
Enriched bread	14.4	10.9
Lean pork	14.0	14.6
Beef	7.7	9.5
Dried beans	6.5	6.9
Medium fat pork	6.2	5.1
Whole cereal	4.6	6.2
Peanuts	4.6	3.7
White potatoes	4.5	5.7
Fowl	4.3	4.8
Organ meats	3.2	4.7
	70.0	72.1

Whole cereals were the highest contributors in the diet of the preschool groups; peanuts in that of the boys; enriched bread for girls and men; and lean pork for women. Milk appeared among the 10 best sources for school and preschool children but not for adults.

Calcium. Milk was the chief contributor of calcium in the diet of all the groups in this study, averaging 72 per cent of the total intake for preschool children, 62 per cent for school children, 55 per cent for men, and 43 per cent for women. Dried beans and green leafy vegetables were the next best sources. Enriched bread furnished approximately 5 per cent of the calcium intake for adults and between 2 and 3 per cent for school children. Cheese contributed about 6 per cent to the diets of adults and school girls but much less to those of other groups.

Iron. In a region that has been said to suffer from a generalized anemia of moderate degree, the usual sources of iron are important. It is interesting that dried beans are the chief source of iron for all groups, contributing about one fourth of the total intake. Whole grain cereals were the second best source for children, with eggs or milk third. Eggs were an important source of iron for all groups. The 7 foods which contributed more than 3 per cent to the iron content of the diets of men and women are as follows:

Food	Percentage of iron contribution	
	Men	Women
Dried beans	24.4	24.7
Enriched bread	11.5	8.4
Eggs	10.1	8.8
Lean pork	6.5	6.8
Milk	4.9	3.4
Dried peas	4.1	3.7
Whole cereal	3.8	6.4
	65.3	62.2

Like niacin, iron is widely distributed in the constituents of the diet, and the order of importance of specific foods varies from group to group.

Protein. Protein calories in this region in the past have been found to comprise approximately 12.5 per cent of the caloric intake. In this village in 1944–45 protein calories made up 15 per cent of the total. The chief source for children was milk (20 to 32 per cent). For adults, enriched plus unenriched breads were the chief source, with milk second for men but sixth for women. Dried beans were the second best source for school children. Eggs contributed about 9 per cent for adults and 6 to 11 per cent for children. Among adults, lean pork and beef, combined, contributed 13 to 15 per cent and as "meat" would take second place as a protein source. The order of importance of the chief sources of protein among adults was as follows:

Food	*Percentage of protein contribution*	
	Men	*Women*
Bread (enriched and refined)	18.0	14.9
Milk	15.5	5.3
Dried beans	11.3	12.4
Eggs	9.0	8.4
Lean pork	7.6	8.3
Beef	5.4	7.1
Cakes and pies	3.5	3.8
	70.3	60.2

Calories. Milk was the principal source of calories for all children (16 to 24 per cent), with bread or cereal in second place. Dried peas and beans held third place for school children and fourth and fifth place for preschool children. The order of importance of the foods contributing the largest number of calories to the diets of men and women was as follows:

Food	*Percentage of calories contribution*	
	Men	*Women*
Bread (enriched and refined)	20.2	18.4
Milk	13.2	9.0
Cakes and pies	10.0	10.0
Dried peas and beans	9.0	9.4
Cereal (whole and refined)	6.4	8.6
Lean pork	4.1	4.4
Eggs	4.0	3.6
Other sweets	3.8	4.7
	70.7	68.1

A word should be said in closing regarding the proper interpretation of the percentages discussed in this paper. They indicate the relative importance of a given constituent of the diet but furnish no information regarding the adequacy of the diet as a whole. The actual daily intake (in grams) of one group of persons may have been less than that of the others and may even have been below the recommended minimal allowance. The percentage distribution of the nutrients derived from the deficient diet, however, may not differ appreciably from that of groups receiving adequate diets unless there was a conspicuous lack in one food, such as milk for adult women. The question of diet adequacy is not considered in this paper.

Food and Finances

"FAMILIES on larger incomes eat more food—and higher-priced foods," stated Secretary of Agriculture Clinton P. Anderson recently in discussing the effect of income on American diets. "Families in the $5000-and-more income class eat somewhat more than twice as many pounds of food per person as families in the under-$500 level, and they *spend* about six times as much per meal per person. Low income families live primarily on a bread-beans-and-potato diet while the higher income groups include more and more milk, meat, fruit and fresh vegetables in their diets.

"As the income of urban families rises from the below-$500 class to the $500-$1000 class, consumption of tomatoes and citrus fruit doubles. As income rises to the $1500-$2000 class, it doubles again, and approaches a point where consumption of this type of food is nutritionally adequate.

"Other vegetables and fruits, consumed in quantities only one half adequate by the under-$500 families, double in quantity and are consumed in adequate amounts by families in the $1500-$2000 level.

"Consumption of milk doubles also as a family rises from the under-$500 to the $1500-$2000 group. Nevertheless, the milk consumed is only about half that needed. In fact, even at the $5000-and-over level, consumption of milk and leafy green and yellow vegetables is only about three fourths adequate . . . Appetites need some guidance, too. Malnutrition can, and does sometimes, exist in the midst of plenty."—*From Food and Home Notes, USDA, February 27, 1946.*

Effect of Maturity on Nutrients of Snap Beans[1]

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THE percentages of the various nutrients in green snap beans at different intervals during the season are highly variable, even when the beans are grown from the same seed and on the same plot. Presumably this variability is chiefly due to differences in the stage of maturity. Few data have been recorded on the effects of maturity upon the nutrients of snap beans but Culpepper (1) studied the relation of this variable to total solids, sugars, titratable acidity, astringency, total N, nitrate N, starch and pentosans. Tressler *et al.* (2) reported that the ascorbic acid content of snap beans was approximately the same at all stages of maturity but in a later investigation Mack *et al.* (3) observed that the amount of ascorbic acid varied with the stage of maturity and concluded that this variability was due to the distribution of the vitamin between seed and shelled pod and was highest in the larger-seeded varieties. The seeds contained three to four times as much ascorbic acid as the pods on a fresh weight basis. With advancing maturity the ascorbic acid in the seeds increased rapidly, while that in the shelled pods decreased rapidly at first, then remained constant. The net result was a minimum content of ascorbic acid at the usual stage of harvesting. Wade and Kanapaux (4) tested whole (unshelled) pods and found no significant differences in ascorbic acid content between large, medium, and small pods within a strain and only slight differences between samples collected at varying degrees of maturity (immature, marketable, and overmature). Zscheile *et al.* (5) have reported that the younger, shorter beans (whole pods) were higher in carotene than older and longer ones.

It seemed desirable to have further data on the relation between composition and stage of maturity. Assays were therefore made in our laboratories to determine the effect of stage of maturity upon the carotene, ascorbic acid, thiamin, riboflavin, and niacin content of snap beans. The beans were also analyzed for calcium, phosphorus, total ash and nitrogen.

MATERIALS AND METHODS

The beans tested, Asgrow Stringless Green Pod, were grown in the university gardens in 50-ft. rows 42 in. apart. The beans assayed in the fall were harvested during the first week of October 1943, the vines being stripped of all pods late in the afternoon and given a preliminary sorting by size as picked. Before final grading they were held overnight in a refrigerator at 34°F. All pods of edible size (about 4 bushels) were then graded and sampled. The beans assayed in the summer were picked during the last two weeks of July and the first week of August 1944. The 1944 beans were harvested according to another plan and certain rows were set aside to be harvested at each of the chosen stages of maturity. Thus reliable data on yields at definite stages of maturity during the season were obtained.

The criteria of maturity, both in the summer and fall, were the sizes of the seeds. Pods were split and seeds removed, several people working together to reduce to a minimum the time for grading and sampling. The seeds and the pods from which they were separated were then grouped into 5 classes:

1. Very immature: seed length under 7 mm.
2. Slightly immature: seed length 7 to 10 mm. This is commonly considered prime market quality, the stage at which pods are the size of a lead pencil and seeds the size of a grain of wheat.
3. Medium maturity: seed length 10 to 14 mm. At this stage seeds are large but the pods are still edible.
4. Overmature: seed length 14 to 18 mm. Many housewives would discard such pods and use only the seeds.
5. Markedly overmature: seed length over 18 mm. and pigment fully developed. Pods inedible—seeds used as "fresh shelled beans."

Late in the fall of 1944 tests were made upon dry mature seeds from the summer planting.

Samples for determining ascorbic acid were shelled directly into metaphosphoric acid. Samples from the most immature pods and seeds were put immediately into N/10 H_2SO_4 for B vitamin determina-

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[2] With the technical assistance of Susan Hulen and Maxine Chapman.

tions. Materials for all other vitamin tests were sharp frozen immediately after separating seeds from pods and held at −40° until analyzed. (Materials to be tested for carotene were blanched before freezing.) Records were kept of weights of shelled pods and of seeds and all determinations run in duplicate.

The following analytical methods were used for vitamin assays:

Carotene. Moore and Ely (6). Beans blanched before carotene determinations, and extraction made with 85 per cent methyl alcohol before chromatographic adsorption.

Ascorbic Acid. Mack and Tressler modification of Tillmans' method (7).

Thiamin. Thiochrome method (8).

Riboflavin. Snell and Strong (9).

Niacin. Snell and Wright (10).

TABLE 1

Dry matter, vitamins, protein, and minerals in shelled pods and in seeds (separated tissues)

STAGE OF MATURITY	QUANTITIES PER 100 GM. SEPARATED TISSUES									
	Dry matter	Carotene	Ascorbic acid	Thiamin	Riboflavin	Niacin	Protein	Ca	P	Total ash
	gm.	*mcg.*	*mg.*	*mcg.*	*mcg.*	*mg.*	*gm.*	*mg.*	*mg.*	*gm.*
Very immature										
Summer										
Shelled pods	10.1	130.4	20.8	58.1	70.5	0.54	1.744	34.7	42.5	0.697
Seeds	8.5	446.1	73.4	331.1	1210.2	1.61	3.083	16.4	8.3	0.554
Fall										
Shelled pods	9.5	377.6	20.2	66.1	68.0	0.44				
Seeds	14.5	249.6	42.2	753.0	2024.0	1.81				
Slightly immature										
Summer										
Shelled pods	11.4	63.4	31.0	60.1	70.5	0.58	1.983	39.8	45.0	0.779
Seeds	17.5	416.6	52.1	370.7	716.5	1.81	4.490	29.4	154.0	1.141
Fall										
Shelled pods	10.0	307.2	20.2	60.0	60.0	0.29				
Seeds	11.2	209.9	38.8	380.0	1286.0	1.39				
Medium maturity										
Summer										
Shelled pods	11.8	157.1	24.5	62.9	66.0	0.76	2.065	36.7	48.0	0.851
Seeds	22.2	236.2	51.9	309.8	314.8	2.06	6.945	42.8	182.8	1.176
Fall										
Shelled pods	10.2	174.1	19.5	53.2	61.0	0.42				
Seeds	18.4	167.7	45.0	572.0	458.0	1.74				
Overmature										
Summer										
Shelled pods	13.2	167.5	32.3	46.2	55.7	0.75	2.102	46.2	36.4	0.929
Seeds	33.6	115.6	47.7	308.0	128.4	2.47	11.330	38.7	233.7	1.618
Fall										
Shelled pods	11.6	199.7	26.8	34.1	86.0	0.88				
Seeds	29.0	103.7	48.0	396.0	137.0	2.36				
Markedly overmature										
Summer										
Shelled pods	15.4	75.2	25.0	44.6	53.7	0.60	0.941	101.7	20.1	1.649
Seeds	47.3	31.9	17.0	373.2	77.5	1.80	10.456	50.3	240.5	2.018
Fall										
Shelled pods	13.9	197.1	24.0	35.0	81.0	0.76				
Seeds	34.2	71.7	42.0	265.0	119.0	2.38				
Mature dry seeds										
Summer	90.6			499.0	125.4	2.30	24.194	93.4	518.5	3.834

Materials were vacuum-dried and ground in a Wiley mill before analysis for calcium, phosphorus, total ash, and nitrogen.

RESULTS

Vitamin Content. Analytical data on vitamin assays appear in Table 1. When size of seeds was used as the criterion of maturity in (contd. on p. 418)

TABLE 2

Dry matter, vitamins, protein, and minerals, in whole (unshelled) pods

STAGE OF MATURITY	QUANTITIES PER 100 GM. PODS (FRUIT)										
	Separated tissues	Dry matter	Carotene	Ascorbic acid	Thiamin	Ribo-flavin	Niacin	Protein	Ca	P	Total ash
	gm.	*gm.*	*mcg.*	*mg.*	*mcg.*	*mcg.*	*mg.*	*gm.*	*mg.*	*mg.*	*gm.*
Very immature											
Summer											
Pods	97.7	9.9	127.4	20.3	56.7	68.9	0.527	1.705	33.9	41.5	0.681
Seeds	2.3	0.2	10.1	1.7	7.5	27.4	0.036	0.070	0.4	0.2	0.012
Totals	100.0	10.1	137.5	22.0	64.2	96.3	0.563	1.775	34.3	41.7	0.693
Fall											
Pods	97.6	9.3	368.5	19.7	64.5	66.4	0.430				
Seeds	2.4	0.3	6.0	1.0	18.1	48.6	0.040				
Totals	100.0	9.6	374.5	20.7	82.6	115.0	0.470				
Slightly immature											
Summer											
Pods	94.0	10.7	136.4	29.2	56.5	66.3	0.547	1.865	37.4	42.3	0.733
Seeds	6.0	1.0	24.7	3.1	22.0	42.6	0.108	0.267	1.8	9.2	0.068
Totals	100.0	11.7	161.1	32.3	78.5	108.9	0.655	2.132	39.2	51.5	0.800
Fall											
Pods	95.2	9.5	292.2	19.2	57.0	57.1	0.270				
Seeds	4.8	0.5	10.1	1.9	18.4	62.9	0.070				
Totals	100.0	10.0	302.3	21.1	75.4	120.0	0.340				
Medium maturity											
Summer											
Pods	89.2	10.5	140.2	21.9	56.1	58.9	0.675	1.843	32.7	42.8	0.760
Seeds	10.8	2.4	25.4	5.6	33.3	33.9	0.222	0.747	4.6	19.7	0.126
Totals	100.0	12.9	165.6	27.5	89.4	92.8	0.897	2.590	37.3	62.5	0.886
Fall											
Pods	89.6	9.1	156.0	17.5	47.7	54.2	0.370				
Seeds	10.4	1.9	17.4	4.7	59.5	47.6	0.180				
Totals	100.0	11.0	173.4	22.2	107.2	101.8	0.560				
Overmature											
Summer											
Pods	77.5	10.2	129.8	25.0	35.8	43.2	0.581	1.629	35.8	28.2	0.719
Seeds	22.5	7.6	26.0	10.7	69.4	28.9	0.557	2.553	8.7	52.7	0.364
Totals	100.0	17.8	155.8	35.7	105.2	72.1	1.138	4.182	44.5	80.9	1.084
Fall											
Pods	74.2	8.6	148.2	19.9	25.3	63.8	0.650				
Seeds	25.8	7.5	26.7	12.4	102.2	35.4	0.610				
Totals	100.0	16.1	174.9	32.3	127.5	99.2	1.260				
Markedly overmature											
Summer											
Pods	51.6	7.9	38.8	12.9	23.0	27.7	0.308	0.485	52.5	10.4	0.851
Seeds	48.4	22.9	15.5	8.2	180.6	37.5	0.870	5.060	24.4	116.4	0.976
Totals	100.0	30.8	54.3	21.1	203.6	65.2	1.178	5.545	76.9	126.8	1.827
Seeds alone	100.0	47.3	31.9	17.0	373.2	77.5	1.798	10.456	50.3	240.5	2.017

(*Continued on page 418*)

TABLE 2—*Continued*

STAGE OF MATURITY	QUANTITIES PER 100 GM. PODS (FRUIT)										
	Separated tissues	Dry matter	Carotene	Ascorbic acid	Thiamin	Riboflavin	Niacin	Protein	Ca	P	Total ash
	gm.	*gm.*	*mcg.*	*mg.*	*mcg.*	*mcg.*	*mg.*	*gm.*	*mg.*	*mg.*	*gm.*
Markedly overmature—*cont'd*											
Fall											
Pods	61.1	8.5	120.4	14.7	21.4	49.5	0.460				
Seeds	38.9	13.3	27.7	16.3	103.1	46.3	0.920				
Totals	100.0	21.8	148.1	31.0	124.5	95.8	1.390				
Dry seeds											
Summer											
Seeds		90.6			499.0	125.4	2.304	24.194	93.4	518.5	3.834

TABLE 3

Yields of dry matter, vitamins, protein, and minerals per acre snap beans

STAGE OF MATURITY	YIELDS PER ACRE PER SEASON										
	Weight	Dry matter	Carotene	Ascorbic acid	Thiamin	Riboflavin	Niacin	Protein	Ca	P	Total ash
	kg.	*kg.*	*gm.*	*gm.*	*gm.*	*gm.*	*gm.*	*kg.*	*kg.*	*kg.*	*kg.*
Very immature	2698	273	3.711	582.590	1.733	2.599	15.088	47.8870	0.9247	1.1253	18.7151
Slightly immature	2710	317	4.338	869.652	2.114	2.932	17.627	57.7647	1.0606	1.3963	21.6867
Medium maturity	1626	210	2.675	444.163	1.444	1.499	15.015	42.1089	0.6073	1.0155	14.4088
Overmature	1186	211	1.835	420.510	1.239	0.849	13.405	49.5684	0.5277	0.9583	12.8482
Markedly overmature (seeds and pod)	734	226	0.396	153.864	1.485	0.489	8.590	40.6952	0.5650	0.9304	13.4107
Markedly overmature (seeds alone)	326	154	0.113	59.753	1.317	0.273	6.344	37.1334	0.1787	0.8540	7.1633

sampling we observed that the beans harvested in the summer were at a more advanced stage of development than were fall beans of the same seed size. This was confirmed by the larger amount of dry matter in both shelled pods and seeds from the summer beans. The percentage of total weight contributed by the seeds in the markedly overmature beans was also higher in the summer sample. On a dry matter basis, as a rule, all vitamins studied were found in higher concentration in seeds than in pods. However, in the fall beans carotene concentrations were lower on a dry basis in seeds than in pods, and carotene, ascorbic acid and riboflavin concentrations in the most mature beans were lower in seeds than in pods.

The vitamin content of fresh, unshelled pods was calculated from the concentrations in separated shelled pods and seeds (Table 2).

Estimates of vitamin yields for the season per acre of beans harvested at different stages of maturity (Table 3) were based on yields and assays of the summer crop. Since the presence of growing beans upon the vines inhibits the setting of new pods, the yield per acre is increased by harvesting at an immature stage. Considering both vitamin content and yield one would get the maximum amount of each of the vitamins for the season by harvesting snap beans at the stage usually considered prime market quality.

Proximate Composition. Table 1 also shows the proximate analyses of shelled pods and of seeds. On a dry basis, the following changes in concentration occurred with increasing maturity: Calcium and total ash increased in pods but decreased in seeds, and phosphorus and protein decreased in both pods and seeds. Only the beans harvested in the summer were included in the proximate analysis calculations.

The proximate composition of whole fresh pods was calculated from the concentrations in separated pods and seeds. The calcium, phosphorus, total ash, and protein content of the beans at various stages of development are listed in Table 2. On a fresh weight basis the content of each of these nutrients increased as the snap beans matured.

Estimates of yields of each of these nutrients for the season, at different stages of maturity, based upon data from the summer crop, are shown in Table 3. Taking into consideration both the amounts of nutrients present and the yield for the season when

harvested at each stage of development, one would get maximum amounts of calcium, phosphorus, total ash, and protein for the season by harvesting the beans at the stage usually considered prime market quality.

SUMMARY

Effect of Season. Beans harvested in the summer were at a more advanced stage of development than fall beans, if harvested at the stage when the seeds were of the same size.

Vitamins. Our tests showed the following range in vitamin content per 100 gm. fresh snap beans at different stages of development: carotene, (summer) 54.3 to 165.6 mcg.; (fall) 148 to 375 mcg.; ascorbic acid, (summer) 21.1 to 35.7 mg., (fall) 21 to 32 mg.; thiamin, (summer) 64.2 to 203.6 mcg., (fall) 75 to 127 mcg.; riboflavin, (summer) 65.2 to 108.9 mcg., (fall) 96 to 115 mcg.; niacin, (summer) 0.563 to 1.178 mg., (fall) 0.34 to 1.39 mg.

Carotene concentration and carotene content decreased with increasing maturity. At every stage the pods contributed most of the carotene.

Ascorbic acid content gradually increased with maturity. With the exception of the most mature beans the ascorbic acid content of the beans was roughly parallel to dry matter. In all except the most mature beans, ascorbic acid concentration was higher in seeds than in pods. The large proportion of shelled pods to seeds, however, decreased the comparative contribution of this vitamin by the seeds. In the most mature beans at least half of the total ascorbic acid was lost by discarding the inedible pods.

Thiamin concentration in the pods and in the seeds of green beans decreased as they became more mature, on either a fresh or dry basis. However, since the more mature beans contained a much larger quantity of dry matter the total thiamin content increased. As the seeds became larger the fraction of thiamin they contributed increased markedly. Pods from which very mature seeds had been shelled contributed little to the total; therefore only a small loss of thiamin resulted when the inedible pods were discarded.

Riboflavin content decreased with increasing maturity and the fraction of riboflavin contributed by the pods was high at all stages. Half or more of the riboflavin was lost when the shelled pods were discarded.

Niacin content increased with maturity and at all stages the shelled pods contributed a large fraction. When the inedible pods of mature beans were discarded, from one third to one half the total niacin was lost.

Other Nutrients. As the beans became more mature the following increases in the other nutrients were observed: calcium 34.3 to 76.9 mg. per 100 gm., phosphorus 41.7 to 126.8 mg., total ash 0.693 to 1.827 gm., protein 1.775 to 5.545 gm.

Yield for Season. If beans are allowed to mature, the setting of new pods is inhibited and the yield for the season decreased. With increasing maturity at the time of harvest the yield progressively decreased from 2698 kg. per acre for immature beans to 734 kg. for beans harvested when markedly overmature. The maximum yield per season of each of the nutrients studied is obtained by harvesting green snap beans at the size usually considered prime market quality: that is, when the pods are the size of a lead pencil and the seeds the size of a grain of wheat.

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BREAD

"If each American family would save just one slice of bread a week, one hundred million loaves would be saved in a year. Or, to estimate by the day, if each family would save half a slice a day, the saving would amount to a half million loaves daily."

This is a statement by Dr. Hazel Stiebeling, Chief of the Bureau of Human Nutrition and Home Economics, USDA, quoted in *Food and Home Notes*, March 6. We feel that, translated into terms applicable to the individual, the statement should appear in every public and institutional dining room, in juxtaposition to pictures of starving European children.—Ed.

Editorial

THE ERA OF DISILLUSIONMENT

After every great war we are told comes the aftermath—the intensified cynicism, the materialism, the greed and the overweening drive, individually and nationally, for selfish advancement. Those, the bereaved and the maimed, who have suffered most; and those, the men and women who have experienced the havoc of modern warfare, gradually, then generally and quite understandably feel a bitter cynicism, an acid distaste for those who relatively untouched and often selfishly advanced by war, remain seemingly unmoved, unconcerned, by their sacrifices. Greed grows rampant in the land. The question for the many is: not how much am I worth, but how much can I get? It's "never a chant of duty"—it's "an unending wail for rights." Others hesitate to speak the truth as they see it, questioning first: what effect would it have on my material advancement?

Yes, many of us have forgotten too quickly the rows of white crosses on which the sun will never set, and the young men who went bravely away and never came back. We will forget as, sadly but surely, many of us will forget those who, irrevocably maimed, once again assume the unheroic and leveling garb of civilian life.

What can thoughtful people, and this inescapably includes dietitians, do about it? Only this, perhaps: As citizens, we can use our influence toward a national and local governmental policy which discourages rather than condones such greed. As dietitians, we can reaffirm the primary purpose of our American Dietetic Association as stated in its Constitution and as further amplified under the Association's "Principles of Professional Ethics" quoted in part on page 387 of this JOURNAL.

Finally, we can consider which we value most: that satisfaction which comes only with the knowledge of having given devoted service to our fellows; or its reverse, the sating of an urge for material advantage and personal aggrandizement. Clearly the choice is ours.

LIEUTENANT CHARLOTTE B. GREEN RECEIVES BRONZE STAR

According to information received from the Office of the Surgeon General, Lieutenant Green recently received the Bronze Star. The citation accompanying her award reads as follows:

> First Lt. Charlotte B. Green (Army Serial No. R-262), Medical Department, United States Army, for meritorious service in connection with military operations, as Head Dietitian, 347th Station Hospital, from 9 June 1944 to 5 November 1944. Lieutenant Green rendered service of great distinction with this hospital in the European Theater during its operation as a Transit Hospital for air evacuation. With complete disregard for her own health, she handled influxes of battle casualties received direct from the combat zones by air, with such successful results as to directly and favorably affect their medical and surgical progress.

TIME OFF—LEISURE—RECREATION

Professional men and women do not measure their output in hours, and therefore have little subjective interest in the current trend toward a shorter working week. As a matter of fact, since it is rare that a professional job fails to offer stimulation and variety, those so engaged may not need as much time off as those whose monotonous occupations yield less returns intellectually. It may be, however, that it is time all of us fashioned our lives somewhat more in the modern pattern.

Time off, leisure, and recreation are not, as some suppose, synonymous terms, but instead the first two are progressive steps toward the third, which is literally re-creation. Our minds seem to work much like our muscles, which, when tired by the day's work, do best if we first relax them completely, and then put them to work at a vigorous new type of activity. The transition from time off, to leisure, to re-creation, is not automatic. A person with little time off may organize his living so as to snatch at moments for leisure, and it is equally possible for one with a great deal of free time to let it slip through his fingers, or to fritter it away in unrewarding trivialities, or to allow the chores of daily living to assume undue importance. Moreover, there are those who consider time lost unless it is filled with feverish activity. Mental leisure consists of first relaxing the mind, opening the mental windows to take deep breaths of fresh air, then taking a look at the view, or even perhaps keeping up with the latest adventures of Dick Tracy. From there, it takes conscious effort to go on to mental re-creation, just as it does to force our

physical selves out of the arm-chair. In other words, re-creation is an active, not a passive process, and is successful only if it involves creative effort. While it is quite possible to have recreation without either leisure or time off, only the unusual person seems to be able to live life that fast.

If we are to get into step with the times, we must aim toward shorter shifts and straight shifts, in order to do a better job and have more enjoyment, through mental and physical recreation, in the process.

THE JOURNAL EDITOR RESIGNS

The resignation of the Editor of this JOURNAL, Mrs. Mary P. Huddleson, which was submitted to the President and Chairman of the Association's Executive Board, November 1945, becomes effective May 1 coincident with the release of this issue. Effective with the June issue, the editorial responsibilities and the JOURNAL office will be centered in the Chicago office of the American Dietetic Association. All material submitted for publication, including manuscripts and news releases, and books for review and correspondence should therefore be sent to the Chicago address.

Mrs. Dorothea Fletcher Turner, in charge of Nutrition Clinic, University of Chicago Clinics, will serve as Editor of this JOURNAL beginning with the June issue. She was Chairman of the Diet Therapy Section, American Dietetic Association, 1941–44, and is now President of the Illinois Dietetic Association. Mrs. Turner was largely responsible for preparing the *Handbook of Diet Therapy*, a compilation of the Diet Therapy Section, soon to be published by the Association. She is a member of the Dietetic Advisory Council for the Veterans Administration, serving as consultant on matters relating to diet therapy. Mrs. Turner is continuing her responsibilities as Assistant Professor, on a part-time basis, at the University of Chicago School of Medicine along with those as Editor of the JOURNAL.

Amy C. Fahlgren, graduate of North Dakota State Teachers College with a major in education, formerly national Publicity Director for Zonta International and Editor of its publication, *The Zontian*, subsequently Executive Secretary of the Citizens School Committee of Chicago, and more recently Editor and Production Manager of the *Plant Purchasing Directory*, has been appointed Managing Editor of the JOURNAL.

Current Comment

PANORAMA OF AN EVACUATION HOSPITAL

FIRST LT. HELEN M. DAVIS, M.D.D., A.U.S.[1]

Naples, Italy, land of romance, city of dirty streets, souvenir-filled shop windows, and malnourished people, a hospital center located in a fair grounds among numerous bombed buildings—the shattered remains of Mussolini's dream of an exhibition of Italy's power—this was the background of my hospital.

Quartered in tents, with the exception of two frame huts, we hospitalized only French and Arab patients. Italian soldiers worked in the mess, under the supervision of our regular personnel. With all the languages spoken, we seemed a miniature Tower of Babel. My sign language system, fortunately, proved to be easily understood and effective.

Since the tastes of the French and the Arabs were at variance, we had to establish separate mess tents for them. The Arabs, for instance, preferred sitting upon the ground around their mess tent to being inside at the tables provided. There were so many ambulatory patients and they expanded over the area to such an extent that I fully expected to find them calmly having a meal in my tent, all too conveniently located. Close supervision was necessary in order to keep the mess line in any semblance of order. Without it, a sea of faces and outstretched hands with empty plates would appear at the serving unit. The only consideration that I ever witnessed on the part of this group was that extended to a very old French soldier who invariably was given a place of honor at the head of the line.

The difference in nationalities brought its due quota of differences in food habits and prejudices. The Moslem religion forbade the eating of pork, so when possible the quartermaster made adjustments in our meat issue. It was startling what foods would be called pork, simply because they were unfamiliar to the Arabs. I have even had beets and canned tomatoes rejected solely for this reason. Corn and sweet potatoes, too, were most unpopular—corn especially so, for it was considered fit only for cattle and hogs. Tomato juice was instantly thrown to the ground, orange and grapefruit juices were tolerated, while pineapple juice was joyfully accepted. Any sweet was enjoyed. Hard candy, scorned by GI's, disappeared at an amazing rate. Sugar had to be carefully rationed, for a day's allowance would be used at one meal. Bread was an important item, having comprised the main part of the meals of both countries. Accustomed as they were to a heavy dark bread, our white bread seemed like cake.

There was a wonderful feeling of friendliness and cooperation among the dietitians in Italy. Regular monthly meetings sponsored the exchange of ideas. Each dietitian was interested in the problems of the others and was willing and anxious to help.

Until my hospital left Naples, we had had a more or less well-organized existence. As we entered Southern France and continued through this country across the Rhine into Germany, we functioned as an

[1] Now on duty at Thomas M. England General Hospital, Atlantic City, N. J.

evacuation hospital, moving along as the troops advanced, leaving an area almost as soon as we were completely set up. Each new location was sufficiently different to require adjustment of plans and schedules.

Needless to say, monotony did not exist for us. We had good weather, then bad, with its accompanying mud. We were greeted by friendly people, some of whom volunteered their services to the hospital while others brought gifts of food to the patients; and we also received the hostile stares of a defeated people. We were prepared to set up or to tear down our hospital on short notice. At times we lived in tents and used field equipment; or we lived in buildings, had running water (not potable), and even cooked with electricity. The census was constantly fluctuating, often doubling overnight and with no additional help available. Wards would be opened, patients evacuated, and wards closed. We ate C rations, B rations, 10-in-1 rations, and field ration A. We were sometimes issued an emergency hospital supplement for the patients and at other times, a requisitioned supplement based upon a monetary allowance or patient strength. But there were times when no supplement at all was available.

Menus could never be planned more than a day in advance and sometimes planning had to be done the morning the menu was to be served. Depending upon locality and availability of food supplies, units were permitted to purchase fresh fruits and vegetables to add variety and interest to the day's fare.

We cared for allied prisoner of war patients and, at varying times, French, Italian, and German workers. Each day brought its new interest or problem. Life, in fact, was never dull.

It was an experience long to be remembered, not only from a professional standpoint, but also because of the many pleasant associations with the people and places in the various countries in which my hospital was stationed.

THE NUTRITION CLINIC AT MEDICAL COLLEGE OF VIRGINIA

MARGUERITE L. PETTEE

Chief Nutritionist, Medical College of Virginia Clinics, Richmond

"I wants to see the dictator." Puzzled at this strange demand, the medical student asked the elderly Negro woman to repeat her request, which she did. Shaking his head, he led her out to the secretary at the desk. When she again asked to see "the dictator," the secretary said, "Well, who is she, Mattie?" To which she replied, "You know, she's that woman tells you what to eat."

This is not the usual way in which patients approach the nutrition clinic at the Medical College of Virginia, but at any rate Mattie got to see the dietitian, which was what she wanted.

In January 1943 when the nutrition clinic was organized at the Medical College of Virginia, the only dietary teaching of patients was done one afternoon a week by a hospital staff dietitian. This dietitian took time off from her hospital duties to give what help she could in the few hours available. In this clinic, at first, only patients with diabetes and those who needed to gain or lose weight were seen.

Starting from this organized nutrition activity, serving perhaps an average of 24 patients a month, the clinic staff has been expanded until it is now a full-time organization serving at least 150 patients a month, with the number still increasing. Those interviewed include all types of ambulatory patients who require dietary treatment, and who are referred from about 29 different clinics operating in the outpatient department.

Doctors wishing to refer a patient to the clinic write their dietary prescriptions on the chart and send chart and patient to the nutrition clinic. Only the rheumatic fever, prenatal, and diabetic clinics are attended by the staff nutritionists, of whom there are two. Patients from other clinics are sent to the nutrition clinic or are seen by appointment.

A dietary case history is taken for every patient who enters the clinic, so that the dietary prescription may be adapted as closely as possible to the food habits of the individual. For example, if the patient prefers his larger meal at noon instead of at night, his diet is arranged to conform, if possible, which encourages him to adhere more closely to his dietary plan.

Every dietary order is filled individually; no printed diet forms are used, since it is a decided advantage to have the patient realize that his diet has been planned for him and no one else. Should the patient need further assistance, appointments are made for return visits.

Let us suppose, for example, that Henrietta K. weighs about 100 lb. more than she should. A dietary case history reveals that Henrietta is extremely fond of sweets, that she often eats between meals, and that she does not eat regularly. Henrietta can see why she should lose some weight after the disadvantages have been pointed out to her, but if we merely teach her a diet and send her home, the motivation is probably too slight to be effective. On the other hand, if she is going to be followed up every other week, she will have more interest in making a good showing and, theoretically, she will try harder to stay on her diet. This often proves to be the case. Also, if she is conscientious, yet has little to show for her efforts at first, frequent visits help to maintain her morale and serve as an opportunity for explaining why she has not lost weight. After she begins to make some progress and seems to understand the

diet as taught to her, she can come at less frequent intervals, perhaps once in three or four weeks.

Many times patients become worried as to whether they can maintain their weight when they have reached the desired level. The solution to this problem is instruction from time to time over a long period, as they return for their check-up visits. The dietitian points out to them at every opportunity the connection between their weight gain or loss and their diet and activity.

A number of obese patients have lost many pounds, slowly but surely, and at the same time have been re-educated so that they have a new set of food habits which not only helps them to control their weight but also keeps them in better general health.

Often a patient will say that he is perfectly willing to follow a diet but he cannot because he has too little money for food. Such instances are referred to the Social Service Department for investigation. At the request of the social service worker, a market list is figured at current food prices and, if necessary, menus for a week are worked out for the patient in order that the amount of financial aid may be determined fairly. So that these estimates may be as accurate as possible, visits are made weekly to several markets and grocery stores to determine prices and to learn which foods are in generous supply.

Some families are referred to the nutrition clinic, not because of any medical problem, but because they need instruction in the purchasing or preparation of food. These families may have enough money to be well fed if they are taught what to buy and how to prepare it. Often the public health nurses request service of this sort for families with whom they come in contact.

Home visits are made by a nutritionist at the request of various social agencies, when it is thought that a particular kind of nutritional help can be given in the home better than anywhere else. These visits are usually made with a nurse or social service worker.

Another activity of the nutrition clinic is the training of student dietitians as a part of their year of internship at the Medical College of Virginia Hospital. Students are scheduled to spend a month in the nutrition clinic where, under supervision, they take part in all its activities. This type of training is helpful to the dietitian, since working with outpatients involves a shift in viewpoint after working with inpatients. Experience in the clinic also helps to give the students a broader view of the problems encountered in working with the public.

Educational exhibits, planned to tell a story simply, are set up in the lobby of the outpatient department as part of the educational program of the clinic. Pictures or food models are often used in the display in order that the exhibit may be more attractive and therefore effective.

Among other activities of the nutrition clinic staff is the teaching of nutrition to medical, dental, pharmacal, and nursing students, by means of a series of lectures or perhaps a single discussion on some specific subject. Cooperative projects are carried on with other departments of the college. For example, the dental school is engaged in a program aimed at controlling dental decay. The nutrition clinic staff worked out the dietary program in connection with this and supplies individual teaching service when necessary.

Classes are organized for the prenatal clinic patients in which they are taught the fundamentals of a good diet. Student dietitians attend in order to observe this teaching by a staff member, and then continue the classes themselves under supervision. About once a month prospective mothers attend a demonstration on making the baby's formula. Since these patients are quite likely to be in the low-income group, we endeavor to use the kind of equipment they would have available.

A rather intensive program is conducted for the rheumatic fever clinic patients. A staff nutritionist is in attendance at each of these clinics; she sees every child at least once during his visits to the clinic, at which time the child and his parent are given a general idea of the foods which make up a good diet. If any special problems present themselves, these are followed through during clinic appointments later, by means of home visits, or through the nurse who visits the home.

A brief summary of each nutrition conference with the patient is sent to the local doctor and nurse, so that each may know what is being done.

Since the clinic is a comparatively recent innovation, new activities and opportunities for further service to the community are constantly developing. In the near future it is hoped that a plan can be worked out whereby student dietitians wishing to take further training in clinic work may serve an apprenticeship under the supervision of the clinic staff members.

A DIETITIAN SERVES THE COMMUNITY THROUGH ITS SOCIAL AGENCIES

MARGARET WALSH

Consultant Dietitian, Welfare Federation of Cleveland

Cleveland has been one of the first of the large cities to offer dietetic consultant services to its social agencies and institutions. But before elaborating on the many and various duties of the consultant dietitian of the Welfare Federation of Cleveland, a brief history of this project may be in order.

The Welfare Federation, which began its nutrition

program in September 1934, is made up of 147 private and public welfare agencies in Greater Cleveland, and corresponds to the council of social agencies in many cities. It allocates the money raised by the Cleveland Community Fund. The nutrition work was inaugurated by members of the Children's Council of the Federation who felt that curtailment of funds of public institutions during depression years made it more necessary to ensure that the food budgets should not be reduced below the level necessary to secure optimal nutrition, and that these funds should be wisely spent so that optimal nutrition would be obtained with the funds available.

It was deemed wise at first to limit the scope of the nutrition work to children's camps and institutions. Now, however, we have extended our services to include 14 children's institutions, 4 homes for unmarried mothers, 16 summer camps, and 6 homes for the aged, with services offered to other member agencies upon request.

These agencies are scattered throughout the metropolitan Cleveland area and can be easily reached, thus regular visits are possible. All institutions are visited routinely—some monthly, some twice a month, and others less frequently. During these visits menus of the institutions are reviewed and menu patterns suggested, food costs and marketing expedients discussed, recipes interchanged, and other current problems considered.

Telephone requests are numerous. The inquiries concern meal planning, recipes, further explanation of therapeutic diets prescribed by attending physician, the buying and placing of equipment, securing competent kitchen personnel, and during the war, requests for assistance in filling out ration applications and representing the institution at special food panel hearings.

Aside from the foregoing, we determine whether the dietaries are adequate, particularly in children's institutions. Certainly there is no other responsibility of more importance to all who are associated with the care of children. This question of dietary adequacy requires information from the staff physician, the staff dentist, the house mothers and fathers, the teachers, and the consultant dietitian or person trained in foods. All of these, except the last-mentioned, base their reports and recommendations on observation or examination of the children, on findings as the result of tests, or on health habits and reactions to work, study, and play. The consultant dietitian's special responsibility is to study the dietary of the institution, and she therefore bases her recommendation on the information she has obtained from a check of the amounts and kinds of food provided and the methods of food preparation.

The United States Department of Agriculture has published data[1] on the characteristics of adequate dietaries at different cost levels, in terms of amounts of food to be provided per person per week at different levels of age and activity. Foods are grouped as follows: milk and cheese; white potatoes and sweet potatoes; dry beans, peas, and nuts; citrus fruits and vegetables; green and yellow vegetables; other vegetables and fruits; eggs; meat, poultry, and fish; flour and cereals; fats and oils; sugar, syrups, and preserves.

These categories provide measuring sticks for the dietitian's use. From inventories at the beginning and end of a given period, records of purchases and gifts of food within that period, and number of meals served, she is able to estimate the amount of food provided per capita. In children's homes, the range and median ages of both girls and boys are determined.

Further investigations include calculation of rations in quantity developed by A. R. Rose and included in the laboratory handbook of M. S. Rose.[2] This method of calculation affords a means of determining the caloric, protein, and fat adequacy. In calculating rations in quantity, the weights of a specific class of food materials are adjusted so that the total calories, protein calories, and fat calories may be calculated by means of "type class factors." Weights of foods used are "as purchased." Four weeks is a convenient period of time to make a study by this method, but the study should be repeated at different seasons of the year. Space does not permit a lengthy discussion of this type of analysis. We are aware that the factor of food waste varies, and that in most instances the institution management is such that it is difficult or impossible to obtain accurate figures on food waste. (A discussion of this factor will be found in a publication by Bigwood.[3])

Menus from the various institutions constitute another source of information on the dietaries, for methods of serving foods will indicate the extent to which the mineral and vitamin content is conserved and also the variety of foods used. We recommend, even at the low-cost level, the use of a wide variety of foods, to the extent of including a relatively high-cost food at least once during the season. In children's institutions this serves to acquaint the child with a greater variety of foods and prepares him better, both from the standpoints of good nutrition and adjustment to conditions of adult life, for the time when he will leave the home.

Another link in this chain of dietary check-up is the education of the children in good food selection and good food habits through the distribution of

[1] Family Food Plans. USDA (AWI-78).

[2] Rose, M. S.: A Laboratory Handbook for Dietetics. 4th ed. New York: Macmillan Company, 1937.

[3] Bigwood, E. J.: Guiding Principles for Studies on the Nutrition of Populations. Series of League of Nations Publications, III. Health. 3: 1, 1939.

posters and nutrition material to the directors and to the children themselves. Nutrition programs, films and slides are offered to all institutions and have been well received. At present there are eight institutions where food and nutrition classes, taught by local Red Cross nutritionists, are being included in the curriculum. Requests for these classes are coming in regularly.

One of the major responsibilities of the Welfare Federation's consultant dietitian is to recommend the amount of money to be spent each year on the food budget. Since our institutions range from homes for preschool children to homes for the aged, in which activities vary from the very active to the sedentary, recommendations must be highly individualized. To ensure optimal nutrition at low cost, our budgets are planned according to the United States Department of Agriculture's *Family Food Plans*. The recommended meal costs are then submitted to the Central Budget Committee of the Welfare Federation and on these food appropriations for the ensuing year are based. The recommendations are accompanied by reasons for any variance from the standard budget for specific institutions. For example, a small home may have to be budgeted on the basis of buying at retail; in another, the need for special therapeutic diets may influence the daily meal cost.

The first step in recommending the food budget is to translate it into specific amounts and kinds of foods for each particular age group. For instance, the grouping for cereals would include, in addition to five whole grain breakfast cereals, whole grain bread, flour, corn meal, rice, crackers, and one prepared breakfast cereal; under milk, fluid and canned milk and cheese are included; the citrus food group would include canned tomatoes, tomato purée, oranges, grapefruit and canned grapefruit juice. Green and yellow vegetables would include carrots, squash, leaf lettuce, spinach, green beans, and canned peas.

After the dietary is set up according to the specific foods and in the correct amounts, the next step is to calculate the cost. Wholesale costs are obtained from Cleveland Hospital Council which serves as the purchasing agency for the Welfare Federation, and an average meal cost is obtained for each of the institution groups. Budget allocations are made for each year, based on experience in the past and with due regard for future possibilities.

All the institutions report their food expenditures and total meal costs to the Federation's bookkeeping department, and it is the duty of the dietitian to determine whether each institution is adhering to the recommended meal costs. Occasionally an institution which seems to be considerably out of line on cost of food is checked and recommendations are made to correct this situation, possibly through curtailment of buying. On the other hand, should an institution be spending far below the recommended figure, checking is needed to determine whether the dietary is adequate nutritionally. Many times it is just a matter of oversight in not including gifts or donations, thus lowering the meal cost and distorting the true picture of the intake. Accounting of the total food used must therefore be included in reports of food administration.

Even with the increased cost of living and the attendant increase in food budgets, there has been a financial saving as a result of the consultant service. Several institutions are buying more food, such as milk, fruits, and vegetables, particularly citrus fruits, green and yellow vegetables, and eggs, and at the same time, less of the high-cost foods which yield comparatively small nutritive dividends. Thus better food is actually being provided at less cost to the public.

Another responsibility of the consultant dietitian is general menu planning. Menus planned on the basis of 50 servings are sent twice monthly to all the institutions. These menus provide nutritionally adequate meal patterns which include available and seasonal foods. The *Nutrition Bulletin* includes not only a week's menu and quantity recipes, but general information on foods, marketing, meal planning, nutrition, etc., as well as other information on timely subjects of particular interest.

Quarterly meetings are held in some central area for representatives of all the institutions, for which programs especially pertinent to food management are planned. In the past year these meetings have included a report from a representative of the Office of Price Administration on food rationing, a talk by a director of hospital dietetics on large-scale meal planning, and a discussion by a Hospital Council purchasing agent on meat buying. In the early fall a food preservation demonstration was offered through the courtesy of the local gas company's home economics department.

These meetings are well attended. We invite not only the directors of agencies and institutions but also any of the personnel who are directly or indirectly responsible for the food preparation, as well as members of the governing board.

A newsletter is also included in our monthly menu supplement. A particularly good recipe which one home would like to share with others, news items about holiday celebrations or social activities in the various institutions are incorporated in the one-page informal newsletter.

This type of dietetic consultant work is still in its infancy, but it is old enough to have demonstrated its benefits. The need for a similar service undoubtedly exists in many of our metropolitan cities. Institutions without a trained foods person on the staff need help in devising basic budgets for adequate nutrition, and in procuring adequate diets at a reasonable cost. Furthermore, the general public

whose contributions defray the cost of operating these institutions wants to be assured that an optimal diet is being procured at a minimum cost.

The results of this service have been gratifying and much praise is due Victoria K. Ball and Dorothy Ridler, pioneers in this relatively new field in Cleveland.

In conclusion, I should like to suggest that the objectives of the consultant dietitian be threefold: first, to comprehend clearly her function as an adviser, not an administrator; second, to improve her knowledge of nutrition and social service so that she may be better qualified as an adviser; and third, by the proper use of this knowledge, to win the confidence of those who are seeking her services.

A NUTRITION CONSULTATION SERVICE

ALICE B. KLINE

Connecticut Dairy and Food Council, Inc.

In February 1945, Dr. Randall Hamrick, administrative head of the Bridgeport Community Advisory Service Center, made a very inspiring speech to a group of professional women. He explained that the work of the Center, which comprises the solution of problems of the returning veteran, is, in effect, the responsibility of the community and its citizens. I was particularly interested because he went into some detail concerning dietary problems. For example, the correct diet at the right time might have alleviated the long-standing psychosomatic troubles of a man with chronic constipation. He also mentioned the flood of complaints about civilian food preparation which were going unanswered.

I called on Dr. Hamrick the next day and offered my services as nutrition consultant on a voluntary basis, and between us we worked out a program of diet consultation service for the Center. Because the Connecticut Dairy and Food Council, Inc., for whom I work, is cognizant of the urgent needs of a community such as Bridgeport, it has made it possible for me to spend one afternoon and one evening of my regular work week at the Center. The results have been most satisfactory. So far as I know, this is the only Advisory Service Center for returning veterans in the United States with such a nutrition consultation service.

Many people are interested in my work at the Center, and have asked what kinds of diet problems are presented and just what we do.

The diet problems which I encounter may be broken down into two general groups: First, those referred through the medical department of the Center, which call for diet therapy (gastric ulcer cases, for instance, of which there are many). In such instances, of course, the patient is counseled according to the doctor's orders and in line with approved methods of diet therapy. Specific help in menu planning is given and if the patient wishes to have a joint consultation with his wife or mother, it is arranged. At that time we discuss shopping, food preparation, and menu planning to suit the particular case.

The second group of diet problems includes those referred to me by other counselors on the professional staff at the Center. (At one time or another, I might add, most of the professional and clerical staff have come to me for nutrition consultation, too.) These include the overweight, the underweight, the young men who are having trouble getting food "that is as good as we had in the Army," those who don't like the way "Mom" cooks, and those who are in search of knowledge. The questions they ask are, "Am I eating the right food?" "Do I plan my meals correctly?" "How can I select a better lunch when I am eating out?" Other and tougher questions include: "Mom's cooking is so greasy and she never has salads and things like we had in the Army. What can I do?" or, "I'm on an ulcer diet and my mother objects to the food I have to eat. She says I eat too much anyway."

Many of these questions have to be answered in cooperation with the social service worker or the occupational director. In such instances, I go directly to the counselor, ask his cooperation, and report back to the patient immediately. In one case I was called into consultation by the occupational counselor to advise a young man about weight reduction. He wanted to change from a job which had been carefully selected in order to give him the correct amount of arm movement for therapy of a wounded arm. Unfortunately, he was gaining weight because the job demanded less activity than he had experienced in the Army, yet he had not cut down his food intake accordingly. In fact, I found that he was consuming huge amounts of food in order to please a doting mother. I worked out a diet for him which allowed him to lose weight and thus stay on his job in a happy frame of mind.

The variety of nutrition questions I have handled in my year at the Center has shown me that the problems of citizens returning to civilian life are integrated with the total life of the community and that nutrition consultation has an important part to play in the work of an Advisory Service Center.

THE ANN PILLSBURY HOME SERVICE CENTER IN ACTION

ELEANOR BAUR COMBS

Editorial Department, Pillsbury's Home Service Center, Minneapolis

There's never a dull moment for the home economists at the Ann Pillsbury Home Service Center. Located on the top floor of a Minneapolis "sky scraper," the department, staffed with six home economists under the direction of Ellen Pennell (featured in the March JOURNAL), keeps up a fast pace.

New recipe ideas for an ad, inserts with recipes for the 80% emergency flour, a pancake mix test, a comparative yeast test with bread, the constant flow of consumer inquiries by phone and letter, an exclusive news release with photos on No-Knead Bread, a special luncheon, product label revision—requests for such as these come to the Ann Pillsbury home economists thick and fast.

The organization automatically is divided into two divisions, the one centering around the kitchen activities, the other falling under the editorial wing. Each center of activity is dependent upon the other. The work of the kitchen technicians finds expression through the Editorial Department. The home economists in the editorial section lean on the kitchen staff for technical information and recipe releases.

Wilma Hildre, top food technician, times the newly developed Ann Pillsbury No-Knead Bread method

Perhaps a chat with each young woman in regard to her previous training and experience and her present responsibilities would best present a composite picture of the work of the entire department. Since the kitchen is the base of all activities, that is the logical place in which to start.

All three of the food technicians are trained to help with the steady flow of product tests that come to the Ann Pillsbury kitchen, maintaining at all times the highest home economics standards and trying to interpret the results in terms of consumer acceptance. When recipes are being developed they are tested again and again, in order to ensure the highest quality product with a minimum of time, effort and expense to the consumer. Scrupulously prepared reports are filed on each test made so that it is possible to follow the history of a product or a recipe through the period of its development.

Wilma Hildre—Nordic blonde, calm, accurate food technician—is mainly responsible for the development of the techniques that brought the No-Knead Bread method and recipes before the public in the form of the most recent Ann Pillsbury booklet, *Bake The No-Knead Way*. She develops recipes and food ideas for booklets, flour bag inserts and labels. Her special assignment in the Ann Pillsbury Kitchen, however, is to test the various Pillsbury products—all-purpose flour, pancake mix, cake flour, farina, and so on—from week to week and month to month to see that the high quality of the product is main-

Mary Madden and Julianna Austin score rolls made with the new wheat emergency flour

tained over different areas and over a long period of time. Miss Hildre has come to know flour as a seamstress knows fabric. By feel and by working qualities, she can characterize its reaction and demonstrate these results to Pillsbury executives. Her experience, following her home economics degree from North Dakota State University, included teaching and demonstrating as a home supervisor with the Farm Security Agency.

Mary Madden—petite, brunette, efficient—develops new food ideas and recipes for ads and booklets, plans special luncheons, and prepares food for photography. Her keen eye for attractive food and her gifted hand make a tested recipe come alive before the camera. Her ability to organize keeps a

luncheon running smoothly; her knack at menu planning brings acclaim from the luncheon guests. An Iowa State College home economist, her experience prior to her work in the Pillsbury Home Service Center included tearoom and school cafeteria work in Chicago as well as lecturing and demonstrating for the Chicago Milk Foundation.

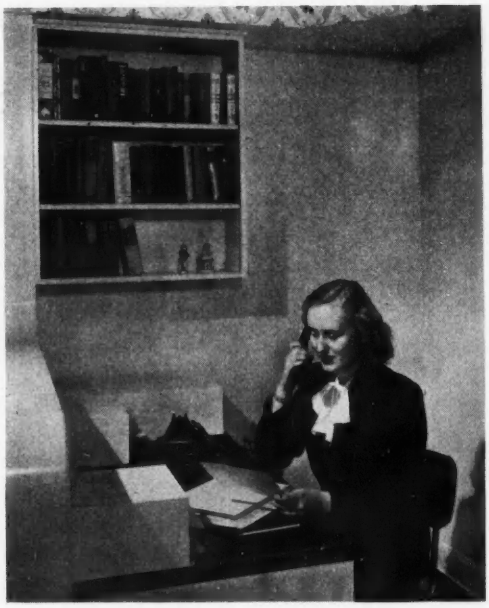
Julianna Austin—curly-headed ex-Marine mess sergeant—is the most recent addition to the Ann Pillsbury kitchen. With a Minnesota University home economics degree and five years of food preparation experience in the Minneapolis school cafeterias in the background, she was "perfect timber" not only for her rating as mess sergeant in the Marine Corps Womens Reserve but for her present position in the Ann Pillsbury kitchen. She is understudying every position in the kitchen to find where her skill best fits into the testing program. At present her specialty is breads and she is transferring her kneading techniques to fit the new No-Knead Bread method.

Eleanor Baur Combs (your writer) checks recipe copy for a current food ad

The editorial section of the department, comprised also of three home economists, is the "voice" of Ann Pillsbury. In this section recipes achieve "style," labels are revamped, food publicity is written, booklets are developed, consumers are helped with their problems and Ann Pillsbury becomes a person to the millions of her friends who write—"Dear Ann. . . ."

Eleanor Baur Combs (your writer) heads the editorial section of the Home Service Center. An Iowa State University home economist, she qualifies for the Ann Pillsbury editorial position because of her former journalism experience as a free-lance writer and as a farm magazine woman's editor, and because of her knowledge of the consumer.

It is important that the person who speaks for Ann Pillsbury know the consumer. As a homemaker, as a former Iowa and New Jersey State Extension worker in the youth and adult field, and, later, as an Area Supervisor in the Farm Security Agency, Mrs. Combs has worked with every type of consumer—rural and urban, youth and adult. Her specific job is to organize and write copy for Ann Pillsbury booklets, food releases and radio copy. She is responsible for all copy on Pillsbury product labels—pancake mix, Sno Sheen, corn meal, hominy grits, and so on. Bag inserts with recipes are a routine job as are monthly press and house organ releases.



Shirley Anderson reads an Ann Pillsbury recipe to an inquiring consumer

Shirley Anderson and Phyllis Willey, editorial assistants in the department, are both home economists with an excellent background in journalism and English. Both have had business training and are good typists. Shirley is a graduate of Iowa State, Phyllis of South Dakota State College. Both share responsibility in handling consumer inquiries and in channelling Ann Pillsbury services back to the consumer. Both have excellent "phone" voices and every effort is made to impart information by written or spoken word in a friendly fashion.

Writing a recipe so that the consumer may follow it without mishap requires skill. The Ann Pillsbury style of placing, step by step, the action word in bold type preceding the recipe instructions or ingredients

which follow has had excellent consumer acceptance. Each member of the editorial staff has mastered this style. The eternal fear of an error appearing in a recipe haunts the editorial staff. "Read, check and re-read," is their creed. Ads, booklets, inserts, labels—all undergo innumerable readings to ensure accuracy.

Ellen Pennell, director, believes that it takes from six months to a year to orient a beginner at the Home Service Center. Basically, the Ann Pillsbury home economists have the same college training. All have had the standard food preparation and nutrition courses. They differ, Miss Pennell believes, only in the trend of their own interests plus the few elected courses they chose. When asked what elective courses they would choose—if they could go back to college—the answer, so far as the editorial staff is concerned, invariably is "more experimental foods work—more art work to help in planning layouts and booklets." With the food technicians, the answer usually is "more journalism."

In every instance the members of the staff believe the basic food techniques and the ability to write make an unbeatable combination. When confronted with the pressure of the business world, they invariably feel the need for more training in judging food standards, in recipe adjustments, in reporting food tests and in general foods copy and recipe writing. All feel that a year of activity in a Home Service Center is equivalent to an additional college degree.

ORGANIZATION OF AN INSTITUTIONAL FOOD SERVICE FOR YOUNG CHILDREN

MIRIAM E. LOWENBERG[1]

Food services for large numbers of children have been set up many times in children's institutions and children's hospitals. However, before the present war, nursery schools usually fed relatively small groups of children. The Kaiser Child Service Centers were unique in that they enrolled between 400 and 450 children in each of two centers: each had one central kitchen serving food to the ten to fifteen units caring for the separate age groups of children.

In setting up our food service we organized our program so that on the base of the actual service of meals we could build a nutrition and parent education program. We were interested in working toward the goal of producing healthy children: that might involve either the maintenance of good health or the improvement of health according to the individual child.

In order to accomplish our purpose it was necessary to look to the welfare of the individual child and the satisfaction of his particular needs. As each child reached a new stage of development he had to be provided with the opportunities to attain a new level of accomplishment. For instance, as he acquired the ability to chew, the meat, previously ground, had to be cut into pieces suited to his abilities. Since children of a given age group develop according to a similar pattern, our food service was keyed to the 18, 24 or 36-month-old. Individuals in a group who were retarded or advanced could then be given special consideration.

The chief nutritionist in reality was a child nutritionist who through training and experience understood not only children's food needs but also their developmental patterns. She realized that her program would have to be worked out in cooperation with teachers and educational supervisors, and also should be coordinated with that of the nurses and the medical director.

Our kitchens, of necessity, were institutional size. The problems of buying, kitchen management and food service required the supervision of an institutional food manager. Each of our two kitchens was therefore supervised by a woman trained in the management of large quantity food service. One had her master's degree in institutional management, and experience in a college and a naval training center food service. The second manager had had some graduate work beyond a bachelor's degree, and 13 years of experience in charge of a college food service in Portland. During a time of food shortages her entrée to wholesale vendors in the community was of invaluable aid to us. She also knew the local markets better than those who had come from the Middlewest, and she knew women in the local community who could be hired as cooks and cook's helpers. In a labor-short area this was extremely valuable.

Our child service centers, serving three shifts in the shipyards, were open 24 hours a day. This meant that kitchens were open at 6 a.m. in order to serve breakfast to children whose parents worked on the graveyard shift. These children had their breakfasts before their parents called for them. On the other end of the day, swing shift children had their supper. Both of our kitchens were kept open approximately 14 hours a day. In order that the kitchens should have adequate supervision, each food manager had an assistant who usually supervised the late afternoon and evening service and assisted the manager through the noon hour.

As a requirement for an assistant we demanded college training in large quantity food service. Each kitchen had two different assistants during our 21½ months of operation. Three of these assistants had had hospital internship and the fourth had married at the end of her college course in dietetics and had not taken an appointment in hospital dietetics. One of the assistants had received her master's degree in

[1] Now Nutritionist, Rochester (Minnesota) Child Health Project.

nutrition while she was taking her hospital training. Because she was especially interested in children she had also taken several courses in child psychology. She served as an assistant teacher during the noon hour which enabled her to be of special help in correlating our program with the educational program of individual teachers.

The two food services served approximately the same number of children and adults each day. Both kitchens had identical floor and equipment plans. Each manager, however, made slight changes in arrangement to suit her own needs, and each set up her own methods of organization.

It was interesting to observe the differences in the two kitchens. In one the meal counts from the separate units of children came directly to the cooks and were recorded on a high blackboard. Workers preparing and serving food, those making sandwiches or dishing desserts, and the women setting up the food carts made their own interpretation of the count. In this kitchen when a worker anticipated being absent she talked over plans for the day's work with the kitchen staff before she talked with the food manager. In the other kitchen all unit counts came directly to the food manager. She then made out slips giving quantities to each worker on a particular job. She also made all plans for absences and division of extra tasks.

Both kitchens accomplished equally well their task of serving adequate and well-prepared food to their groups. However, the food service in which the kitchen staff did more of their own planning was better able to withstand the occasional absenteeism of kitchen staff or food managers.

The chief nutritionist planned all menus. However, since she had no desire to control the food service autocratically, the original pencil-drafted menus were first given to each manager to criticize. The food manager also often consulted her cooks, who might find one menu too time-consuming. Menus were often shifted to allow "easy" days so that such time-consuming dishes as fruit cup could be prepared in advance. Since pieces of food must be small for the 18-month-old, or 2 or 3-year-old, fruit and vegetable preparations, especially, were time-consuming. Canned vegetables therefore had to be used many times. Young children are more interested in tenderness of skin than brightness of color in a vegetable; and canned vegetables with their mild flavor and well-tenderized skins satisfy them more than a crisp and often slightly tough fresh vegetable product.

The chief nutritionist was also in direct charge of the problem of suiting the food to the needs of young children. She set up standards and offered suggestions for changes to both the manager and, through her, to her kitchen staff. If a particular food was not well received by the children it was her task to discover why and correct the difficulty in the kitchen. A starch dessert might reach the children after it had become "gummy": recipes then had to be changed to include more moisture. Seasonings also needed to be checked to see that they were desirable for young children: desserts too sweet could be changed and vegetables and meats could be seasoned with less salt. At first many children rejected stewed tomatoes. The cooks were advised to add a small amount of sugar, reducing the amount gradually until the children learned to like their fresh acid flavor. Managers and cooks also had to learn what foods were popular with children in order to know how much to prepare. They had to be taught that a young child likes best the foods with which he is most familiar. Often this meant that the chief nutritionist must urge the kitchen staff to be patient while the children were learning to know and like a new food. At first the cooks could not understand why I persisted in including unpopular foods in the menus. They soon, however, observed that these foods gained acceptance each time they were served.

The enthusiasm of the cooks was especially encouraging since only one of them had ever cooked for groups of children before. They were as eager to see how well the children were eating as any of us. From time to time we allowed them to observe in the dining rooms since ordinarily their activities removed them from the children. Through the teachers we invited groups of 3, 4 and 5-year-old children to come into the kitchen to watch a 75-pound halibut being prepared for Friday's fish dish, or the fruit and vegetable man unload his cargo into the walk-in refrigerator. Groups of children often came into the kitchen to thank the cooks for an especially good meal.

Another cogent factor in keeping up the morale of the kitchen staff was that each worker was considered an important part of our total staff. A cook who had a perfect record of attendance received the same acclaim as a senior teacher. The cooks were invited to attend the nutrition discussion meetings led by the chief nutritionist. They often prepared special treats for teacher's teas and were in turn honored at teas at which the teachers prepared the food.

All adults who did not eat with groups of children came to the kitchen for their tray meals, as through a cafeteria line. This also gave teachers and supervisors a chance to know the kitchen staff better.

It was undoubtedly the close cooperation of the food staff, cooks and teachers that made it possible to prepare special food for the individual child—the one allergic to eggs or the child temporarily on a soft diet.

As the chief nutritionist was released from the actual supervision of problems of the preparation of food for children she gave more and more time to the nutrition program, ferreting out causes of an individual child's food dislikes, or lack of appetite. More attention could be given to children who showed evidences of borderline malnutrition. Time

was also available to encourage teachers to use their bulletin boards or hall displays to teach nutrition to parents. The chief nutritionist also found more time to write pamphlets for parents offering help with specific problems such as desirable middle-of-the-night food for swing shift children or hints on wise buying in a war-congested area.

As a special aid to parents, Home Service Food which could be ordered in advance, taken home to be quickly reheated, and easily supplemented with quickly prepared foods was offered for sale. Parents who ordered these meals were given menus suggesting appropriate foods with which to supplement the Home Service Food. The menus were prepared one week in advance so that parents who wished to follow them could plan their food purchases wisely. The sale of Home Service Food and the menu suggestions also offered the chief nutritionist an opportunity to help in assuring better meals for the children at home. Mothers tired from a day's work in the shipyard were often too burdened to prepare adequate evening meals.

Each week we gave the parents menus done in two colors, listing foods served to the children at the center and suggesting foods for home meals. This proved to be a valuable way of influencing parents to feed their young children wisely. The number of calls to the nutritionist's office when for some reason or another menus failed to come out on time attested the interest in these weekly menus.

My experience had been largely in serving food to a small group of children in a college nursery school. However, I believe that a quantity food service can be adapted to the needs of a large group of young children. Recipes, methods and procedures must be standardized and constant supervision given. Furthermore, the food service can go beyond the actual service of good meals, on time. The program can be educational not only for children, but also for teachers and parents.

AN EMPLOYEE TRAINING PROGRAM IN THE MAKING

BERTHA BILTZ AND MARY AGNES POHL

Director of Dietetics, and Employee Training Supervisor, Saint Luke's Hospital, Cleveland

When our employee training program was undertaken October 1, 1945, a tentative plan had been formulated to guide the program through the initial stages. Since this plan has now been in use for six months, certain modifications and additions appear to be indicated.

The idea of a training program is sound, and its need quite apparent, especially in a large hospital or institution where there are a great number of employees. With the addition of new and improved equipment, no matter what type, well trained operators are needed in order to obtain the maximum service from such equipment. In view of the success that many types of industries have achieved where such a training program has been instituted, it is fully as important that employees in a hospital likewise receive the proper training from the start if they are to acquire the necessary skill.

The method of teaching new employees can be an effective means of reducing the high percentage of labor turnover. The first days on the job, like all first impressions, are remembered; therefore if a new employee is adequately instructed in every phase of the job from start to finish, he is more apt to accomplish better work because of the acquired skill.

A graduate dietitian was added to the dietary staff as an employee training supervisor. It was felt that because of her training and experience she was qualified to instruct the employee in correct food handling procedures and to judge the quality of his work and to make any necessary changes more efficiently. She is directly responsible to the director of the department and works with the therapeutic and administrative dietitians.

After a prospective employee has been interviewed in the Personnel Department, he is referred to the director of the Dietary Department who discusses with him the duties, hours, salary and general hospital policies. If he is interested, the employee training supervisor takes the applicant to the kitchen and shows him his place of work. This has a twofold purpose; to acquaint the individual with the place in which he will work as well as the type of job for which he is being considered. He then returns to the Dietary Department office where final arrangements are completed if he is hired.

The employee training supervisor works on the same schedule as the new employee for 3 to 5 days, depending on the individual and the position. The training and the instructions are given according to the job analysis as set up by the dietitian who is responsible for the unit. At the end of this initial training period, the unit dietitian is responsible for the employee and if there are any changes to be made in the schedules or in the work within the unit, they are made by this dietitian.

At the end of one week the employee training supervisor does a "follow-up" of the new employee. This is an aid to both employee trainer and employee for it is a means of reviewing the schedule with the employee and of observing the progress made within the week. On the day of the follow-up, the training supervisor again works the same hours as the employee, and endeavors at the same time to determine where there might be lost time and motion. At this time it helps to let the employee know how well he is progressing so that he will be encouraged to keep up his good work. If his work (cont'd. p. 433)

TABLE 1

Saint Luke's Hospital

PROGRESS REPORT

Name of Employee..... Department..... Position.....

The above individual has been in your department for two weeks; during this time he has received job training while at work. At this time a report of the employee's progress and adjustment to the job will serve as an aid in determining his efficiency on the job, his ability to adjust to working conditions, and the effectiveness of the training. A discussion with the employee of the progress report should serve as an aid in the correction of his weak points. This and subsequent progress reports will become a part of the employee's permanent record. Kindly send to the Personnel Office in a sealed envelope.

Instructions: Rate employee on each quality under adjective most fitting. The degree of the quality possessed may be indicated by checking in the appropriate column under each adjective.

QUALITIES TO BE EVALUATED	UNUSUAL		EXCELLENT		GOOD		AVERAGE			FAIR		POOR		DEFICIENT	
	7	6	5	4	3	2	1	0	−1	−2	−3	−4	−5	−6	−7
Job performance Quality of work—Consider acceptability of finished product; are all phases of work completed; were proper methods followed in performing job; work up to standard.....															
Quantity of work—Consider volume of completed work; tasks accomplished in allotted time; etc.....															
Working tempo—Does employee accomplish assigned work in allotted time; can additional tasks be accomplished with ease; etc.....															
Work habits—Consider neatness and cleanliness of working area; organization of duties assigned; etc..															
Efficiency at work—Consider daily application to duties; industriousness; effort; etc.....															
Mental ability Ability to learn—Consider ease of learning; ability to adjust to new methods; etc.....															
Ability to follow instructions—Consider ease of application; ability to follow instructions specifically.....															
Initiative—Consider organization of work; suggestions to improve methods; ability to "see" work to be done; etc.....															
Ability to make decisions—Consults supervisor regarding decisions; exercises good judgement when decisions are to be made; etc.....															
Personal traits Appearance—Consider personal cleanliness, appropriateness of dress (hair, shoes, etc.); neatness; etc.....															
Cooperativeness—Consider attitude toward job; relationship with supervisor; willingness to incorporate new duties; etc.....															
Courtesy—Courtesy to supervisors, co-workers, etc.....															

TABLE 1—*Continued*

QUALITIES TO BE EVALUATED	UNUSUAL		EXCELLENT		GOOD		AVERAGE			FAIR		POOR		DEFICIENT	
	7	6	5	4	3	2	1	0	−1	−2	−3	−4	−5	−6	−7
Personal traits—*Continued* Reliability—Consider separately: Attendance															
Promptness															
Ability to work without immediate supervision															
Emotional stability—Adjusts to new situations, duties, personnel, etc.															
Interest in work—Likes assigned work; interested in improving job status															

Have you discussed this report with the employee? ..... Date .....

Reaction of employee .....

.....

Comments .....

.....

.....

Date of Rating ..... Rating done by .....

is not satisfactory, it may be possible to remedy the situation.

At the end of a 2-week period, a progress report is made by the unit dietitian in conjunction with the employee training supervisor and then discussed with the employee. If the rating is satisfactory, a second rating is made at the end of a 3-month period prior to the first salary increase. On the other hand, if the first rating is unsatisfactory, a second is made at the end of a month. If this is still unsatisfactory, the employee is transferred to another job within the department. If a third rating continues to prove unsatisfactory, he is transferred to another job in another department or his period of service is terminated. We have found that when an employee receives his first rating at the end of a 2-week period, it usually proves to be an incentive to do better work.

The next rating, at the end of 6 months, is accompanied by a salary increase given if the work is satisfactory. Another rating follows at the end of one year.

Table 1 shows the progress report used for new employees. A similar rating sheet for employees who have been in the hospital service for over one year has just been completed. These were compiled by the Personnel Department in conjunction with the Dietary Department and both are filed with the employee's permanent record. The first ratings are done in blue, the second in red, and the third in green.

In connection with these training programs, procedures have also been set up for an orientation tour for all new employees conducted every Tuesday afternoon by the director of the Personnel Department or her assistant throughout the entire hospital. This enables the employee to compare his department with others. Many employees would otherwise have no idea of the relationship of the hospital departments had they not this opportunity. Another helpful sequence to this experience is that employees tend to observe some of the rules and regulations more faithfully when they understand the "whys and hows" of these rules.

During the 2-week period, the employee training supervisor, in addition to teaching the employee the actual work to be done, introduces the employee to his co-workers so that he will feel at ease. At this time also the employee is taught to check his time card correctly. These incidental items lay the foundation for the building of proper attitudes and also promote the establishing of good public relations.

One fundamental that must be emphasized is that the cooperation of all is an absolute necessity. If staff or student dietitians, dietary employees, or other hospital personnel feel that the program will not function, the desired goal will not be attained. Cooperation must be emphasized. A

factor which has intensified cooperation is that all staff dietitians have been instructed in the principles of the Training Within Industry course as set up by the War Manpower Commission. This course has established the basis for development of our training program.

A feature initiated this year is a bi-monthly class for employees of not over 10 to 15 minutes' duration, and covering such topics as sanitation, health, accident prevention and hospital relationships. Films and demonstrations augment the lectures. These classes are supplemented by daily classes of 10 to 15 minutes for pantry maids. Similar classes for cafeteria employees are in the process of organization. At these daily sessions the menu is read and discussed by the unit dietitian and a short talk and demonstration on appearance or some phase of serving may be given by one of the employees.

Manuals for groups of dietary workers will be developed as our training program progresses. Pamphlets for the pantry maids are already completed.

A manual on kitchen equipment is now being completed. This illustrates each piece of equipment, and includes directions for its use and care and job breakdowns for the operation and cleaning of each piece. The manual has proved to be an aid in ensuring fairly uniform instruction of employees in the operation of equipment.

Records will be one of the deciding factors in determining the value of the program and the points to be emphasized, and will serve as guides in the future development of our training program. At the end of the year we feel that it will be possible to determine just how many days should be spent in the initial training of an employee for a particular job.

It is anticipated that such a training program will tend to decrease labor and supply costs. Time and motion studies and further training should also enable employees to assume additional duties, thus reducing the number of employees required, and duties involving special skills. Such a training program is possible in any hospital whether or not there is a full time training director. Its rewards, more loyal and conscientious employees, cannot be valued only in monetary terms.

TRAINING NEW EMPLOYEES[1]

ALICE BROWN

David Hale Fanning Trade School for Girls, Worcester, Mass.

We are hearing a great deal about work simplification and time and motion studies, also Job Methods Training, sometimes referred to as J.M.T., and Job Instruction Training, referred to as J.I.T. What are these programs? Work simplification and time and motion study projects have been conducted in several of the colleges in cooperation with the extension workers and homemakers. Studies have been made at Purdue, Syracuse[2] and Cornell Universities. Reports of studies in this field have been published in the *Journal of Home Economics* for December 1943 and March 1945. An article in the October 1945 issue of *Mademoiselle* reports some of the job methods and time and motion studies made, suggests the possibility of finding a career in this specialized field of work, and includes a useful bibliography.

Job Methods Training is a plan developed by the War Manpower Commission to help produce greater quantities of quality products in less time by making better use of manpower, machines and materials. A simple formula is followed: 1. Question every detail of present method. 2. Eliminate unnecessary details. 3. Evaluate methods by asking, for each step, why, how, when, what?

Job Instruction Training is a method used to train new workers effectively, or to train old workers to do new jobs. The following steps are used: 1. Analyze the task using J.M.T. methods. 2. Organize the material into logical order. 3. Correctly state what is to be done. Give this instruction by telling about and demonstrating each step of the job.

Do food supervisors need to use job methods or job instruction training? What do the formulas mentioned above have to offer that might be useful? The following may be of assistance in answering these questions.

Consider first the ways in which people learn—by doing, by thinking, by seeing (demonstration), by being told, and by being checked and corrected. Telling and demonstrating are the two methods stressed in the Job Instruction Training program. But before you are ready to teach by the telling-demonstration method, a breakdown of the task should be made, the mechanics of which are as follows:

Divide a sheet of paper into halves by placing a line down the center from top to bottom. On the left hand side list the logical parts of the operation in the order in which they occur. They are the operations which the instructor performs and which the learner will imitate. In the right hand column set down the reason *why* the step is taken, *when* and *how*.

Examples of the need for questioning each step follow: Some of us were taught to heat all the milk (or liquid) when making yeast rolls. This was supposed to kill harmful bacteria which might affect flavor. A text as recent as 1941 gives as step one: "Scald liquid," although it is suggested that half milk and half water may be used. Is this step of scalding the milk a tradition carried over from the days when we did not have pasteurized milk? Time

[1] Presented before the Food Service Directors' Conference, Hartford, Conn., November 10, 1945.

[2] "Work Simplification in the Home Economics Curriculum," by Mary Koll, is obtainable from the Syracuse University Bookstore, price $1.

is saved if only half the liquid is heated, the fat, salt, and sugar dissolved and the remaining cold milk added to cool the liquid to lukewarm, ready for the yeast.

Another traditional method, that of putting salt in vegetables, might be evaluated. Some of us were taught to add the salt at the end of the cooking period. Is the worker most apt to remember to add the salt at this time, or when she puts the water on to heat? The flavor of the vegetables served in the dining room may depend on how we answer this question.

JOB BREAKDOWN 1

Making white sauce, French method

Remarks: Good white sauce is judged by the consistency and smoothness, which depend on the ratio between the flour and milk, high temperature of the liquid and the separation of the starch grains.

STEPS	WHY HOW WHEN
1. Measure and heat the milk.	1. Use a double boiler. 2. Cooking over boiling water prevents scorching.
2. Measure or weigh the flour and fat.	1. Flour must be sifted before it is measured.
3. Melt fat, remove from heat, stir in the flour.	1. Must be well blended so that all starch grains are coated with fat. 2. If not well blended, you will have a lumpy white sauce. 3. Called making a roux.
4. Add fat-flour mixture to the hot milk.	1. To make the starch grains burst the milk must be 190°F., called scalding hot. 2. If milk is not hot enough, mixture will not thicken quickly and must be stirred a longer time before it thickens. 3. Beat with a wire whip.
5. Cook 15 minutes.	1. Cooking starch develops flavor. 2. Stir occasionally to prevent scum and reduce the temperature of the mixture. 3. Test for doneness: shiny surface.
6. Season with salt just before serving.	1. Salting at end of cooking period prevents curdling of white sauce.

Note: This method is used when the proportion of fat and flour is about equal.

Flavor depends on richness of the milk, amount of fat and seasoning.

Most of the facts listed on the right side under "Why—How—When" could be used to set up a method sheet using sugar or cold liquid to separate the starch grains. This should be added to the hot or boiling liquid slowly so as not to reduce the temperature.

JOB BREAKDOWN 2

Hard cooked eggs, double boiler method

STEPS	WHY HOW WHEN
1. Remove eggs from refrigerator.	1. Allow eggs to reach room temperature. 2. Prevents eggs from cracking when put into boiling water.
2. Put hot water into top and bottom section of double boiler.	
3. Place each section over heat to boil.	
4. Place eggs in water.	1. Use top section for eggs.
5. Place top section over bottom section.	
6. Cook 25 minutes.	1. Timing is important. If cooked longer than 25 minutes, discoloration around the yolk increases as the time increases.
7. Cool immediately.	1. Pour off hot water and place eggs under cold running water. 2. Stops continued cooking from stored heat. 3. Cool until all stored heat is removed from the eggs (shrinks egg from the shell, making it easier to remove the shell).
8. To peel.	1. Roll hard-cooked egg on a hard surface bearing down with enough pressure to crush shell. 2. Remove entire shell.
9. To store.	1. Place eggs in stainless-steel or china crock. 2. Cover with cold water.

Note: The double boiler method relieves the worker from being responsible for watching for the simmering period to begin which is necessary when the cold water method is used. This makes it 50% easier to control the length of cooking time.

Suggestion: Use a steamer if available—has same advantages.

The following direction was given in a published article: "Cut the leaves of spinach before you wash them." Is this what you want the worker to do? This statement also appeared recently, "Directions for boiling vegetables: Step 1. Cook fresh vegetables until crisp-tender in a small amount of boiling salted water. Step 2. Add butter or margarine. Step 3. Drain, heat until butter melts." Is this how it is to be done?

In order to answer the "when" question, tell what evidence there is that a process has been completed. For example, in teaching the standard method of mixing butter cake, when is the butter creamed enough? When are the fat and sugar creamed enough? When has the creaming been completed after the eggs have been added? The key points to be used in teaching are:

1. Cream butter until soft and until it will drop from a knife. (This test, "it will drop from a knife," is determined by what the butter will do. If we said, "cream the butter until it is like mayonnaise," we would be depending on judgment, and your judgment may not be the same as mine as to the consistency of mayonnaise.)
2. Add sugar, and cream until fluffy.
3. Add the eggs, which are at room temperature, slowly, and beat until the mixture changes color.
4. Add the flour and milk alternately, starting with flour and ending with flour.

How fast the sugar and eggs are to be added should be demonstrated. Using these four key points, workers can be shown how to produce perfect cakes. If you check published directions for mixing butter cakes you will find some of these directions given but seldom will you find them all, for instance, the proper temperature of the eggs and milk.

It is most important to answer the question, "How should the job be done?" For example, in arranging strawberries on tarts, instead of placing the berries according to a plan with the largest in the center and smaller berries around the edge, the worker who is not told how to arrange the berries may place one or two large berries among smaller berries around the edge of the tart, with not much balance in arrangement.

Or, to cite another example, key points in describing how to remove the dry skin from an onion might be: 1. Cut off the root and stem end. 2. Cut the onion in quarters. 3. Remove the dry outer layers from each quarter. Time is reduced by taking the root and stem ends off before trying to remove the dry skin, although workers do not always use this method. A time study showed that the time of peeling could be reduced one half by the former method. Cutting off the root end of vegetables to release the outer leaves so that they may be easily removed is a similar time-saving method, to be used with corn, broccoli, celery, lettuce, etc.

There is almost no published material covering the subject of the selection, technique, or the care of simple kitchen tools. The Training Service Department of General Motors Corporation has issued a booklet, *Hand Tools*, which describes how to use such simple tools as the hammer, the screwdriver, etc. It not only tells how to use the tools with safety, but also what not to do with the implements. We need such a book covering the use of kitchen knives.

I should like to suggest six simple rules for the selection of the proper knife for a given job. 1. Use a knife long enough to reach across the area to be cut and extend 3 to 5 inches beyond. 2. Use a knife with a half rounded point when cutting around a curved surface. Steak and carving knives, boning and fruit paring knives are curved at the end of the cutting blade for this purpose. Knives designed for the cutting of grapefruit (breakfast-style) are also curved at the point. 3. Use a straight-edged, pointed knife when cutting against a straight surface. This type of knife is used for cutting rhubarb or string beans on a board, also hot breads, brownies and pies which are cut in the pan. Ham slicers, bread knives, and some paring knives have this type of point. 4. Use a narrow blade when the knife has to be turned at an angle in cutting, as in sectioning fruit and separating the section of fruit from the membrane, also in boning and slicing meat. 5. Use a knife with a stiff blade (French-type) when cutting through firm solid food such as turnips, cabbage, etc. A knife of this type is thicker at the top of the blade —like an ax. If the knife becomes wedged in the vegetable it should be used as the ax is used by lifting the vegetable on the knife and bringing it down on the board. 6. A knife with a thin blade is used for slicing.

In writing job breakdowns, the terminology should be carefully chosen. *Spread* is what you do, not how you do it, and should therefore be listed as a step. If you were writing a job methods sheet on sandwich making, you might list the steps as: 1. Unwrap bread. 2. Place slices of bread on board. 3. Load spatula with filling. 4. Place filling on bread. 5. Spread filling. Step 3 needs some explanation to show the worker how to remove the spatula from the pan to the bread without having the filling drip, such as: "Press the underside of the spatula against the edge of the pan to clean off." Or, in step 5, in order to tell how to spread the filling, you might say: "Tip the spatula down and with pressure against the edge of bread clean off the under side of the spatula."

Scoop is another word that describes *what* you do, not *how*.

The accompanying job breakdowns illustrate some of the points emphasized above. Both sheets give information about simple methods of cookery and processes which are used frequently. Higher wages and a rapidly expanding business will make it much more necessary to pay attention to the means and the method of accomplishing some of the simple processes. We must, therefore, do a better job of telling and demonstrating what we want done if we are to obtain the best results.

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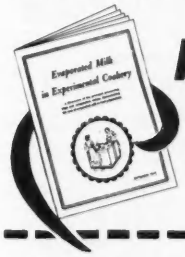

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Appointments, Army Medical Department Dietitians

The following Medical Department Dietitians were appointed during the month of March 1946.

Alexander, Elizabeth: Univ. of Washington; Fitzsimons G. H.
Bowman, Betty O.: Cornell Univ.; Walter Reed G. H.
Conover, Margaret E.: Colorado State Col.; Fitzsimons G. H.
Davis, Catherine D.: Univ. of Connecticut; Walter Reed G. H.
Fibel, Marie: New York Univ.; Walter Reed G. H.
Furman, Jeannette E.: Madison Col., Va.; O'Reilly G. H., Mo.
Hayton, Marian J.: State Col. of Washington; Walter Reed G. H.
Noble, Ruth A.: Rhode Island State Col.; Fitzsimons G. H.
Ross, Oweta: North Texas State Teachers Col.; Walter Reed G. H.
Scanland, Lillian M.: Oklahoma A & M Col.; Walter Reed G. H.
Smith, Jean S.: Pennsylvania State Col.; Walter Reed G. H.

Promotions, Army Medical Department Dietitians

The following Medical Department Dietitians were promoted during the month of March 1946. They are on duty in Army hospitals in this country and overseas.

First Lieutenant to Captain

Trembeck, Helen, R-979

Second Lieutenants to First Lieutenants

Ball, Audrey G., R-1315
Bodal, Ella R., R-962
Bowman, Mary, R-1259
Brill, Gretchen H., R-1435
Case, Orlena H., R-2011
Hendricks, Gwendolyn L., R-2067
Hoole, Marguerite C., R-2048
Horak, Mary C., R-1410
Horrocks, Katherine C., R-2057
Jurcsisin, Olga, R-1398
Keefe, Mary J., R-2128
Loetterle, Emma H., R-2072
Miller, Helen P., R-1338
Nelson, Helen C., R-2174
Pickering, Ethel M., R-1420
Tainton, Dorothy H., R-2039
Wood, Edith E., R-2007

Army Medical Department Dietitians Separated From the Service

The following dietitians have been separated under the provisions of the Separation Policy established by the Surgeon General for Medical Department Dietitians.

Captains

Allbritton, Mildred G., R-403, % Mr. L. E. Elliott, 10th River St., Canon City, Colo.
Bass, Mildred M., R-119, Box 33, Armstrong, Ill.
Bowen, Mildred E., R-113, % Mrs. O. D. Smith, Meadville, Pa.
Buchman, Ruth A., R-242, 1411 Beechview Ave., Pittsburgh.
Campbell, Beth, R-637, 612 Grant Ave., Ft. Leavenworth, Kans.
Childress, Clara E., R-454, 158 Belford Ave., Rutherford, N. J.
Nagle, Kathryn M., R-20, 264 Wachusett St., Jamaica Plains, Mass.
Woodcock, Dorothy L., R-139, Ripley, Maine.

First Lieutenants

Alford, Louise L., R-747, N. Jefferson St., Milledgeville, Ga.
Anderson, Daisy K., R-1130, 722 Harvard Ave. N., Seattle.
Ball, Audrey G., R-1315, 2132 N. Tejon St., Colorado Springs, Colo.
Bately, Martha E., R-1193, Box 215, Maxbass, N. D.
Bear, Janet E., R-1277, 737 Delaware Ave., Peoria, Ill.
Berg, Dorothy M., R-41, Shafter St., Kern, Calif.
Black, Sara B., R-1396, Box 321, Barnwell, S. C.
Bliss, Mary J., R-1332, Box 64, Salem, Va.
Bowen, Angela M., R-2192, 9507 Euclid St., Cleveland.
Broach, Mary A., R-1017, 635 Oglethorpe Ave., Athens, Ga.
Burchuk, Clara M., R-1251, 1608 W. Godfrey Ave., Philadelphia.
Carlson, Olive C., R-921, 3822 E. Howe St., Tacoma, Wash.
Cleary, Kathleen P., R-798, 1407 Sheldon St., St. Paul, Minn.
Cockburn, Constance L., R-927, 630 Emmons Blvd., Wyandotte, Mich.
Coe, Virginia N., R-774, 285 W. Long St., Akron, Ohio.
Cohen, Shirley A., R-886, 3016 Brighton 5th St., Brooklyn, N. Y.
Comstock, Dorothy A., R-863, 9-23rd St., Sioux City, Iowa.
Cooney, Helen F., R-1073, 426 S. Main St., Roseburg, Oreg.
Cotter, Jeanne M., R-469, 1 Papworth Ave., Forest Hill, Metairie, La.
Cropper, Ernestine C., R-2173, High School Ave., Columbia, Miss.
Cuming, Miriam M., R-1195, 553 W. Cole, Downey, Calif.
Davis, Mary E., R-1171, R.R. 2, Oak Hill, Ohio.
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Evans, Dorothy A., R-952, 3864 Park Ave., Indianapolis.
Ferdinand, Gelsie R., R-1200, 622 N. Wyoming St., Hazelton, Pa.
Fitzpatrick, Olga H., R-780, 109 S. Kingsley Dr., Los Angeles.
Fleisher, Mary L., R-848, 522 Martin St., Bollwood, Pa.
Folgate, Rosemary F., R-937, 1115 North Ave., Rockford, Ill.
Garn, Mada C., R-1062, 378 Kathryn Pl., Akron 4, Ohio.
Garner, Mary J., R-1091, 36 Hurstbourne Rd., Rochester, N. Y.
Gillespie, Frances J., R-1308, 5930 Kingsburn Ave., St. Louis.
Groome, Edith H., R-1304, 1640 Madison St., Denver.
Hacker, Roslyn, R-829, 410 N.W. 18th Ave., Miami, Fla.
Hanratty, Alice C., R-901, Barry, Minn.
Hansen, Ruth C., R-1239, 525 Norman Ave., Stevens Point, Wis.
Hardenbrook, Marion A., R-1199, 125 E. 11th Ave., Denver.
Heins, Dorothy A., R-955, 228 Grosvenor St., Douglaston, N. Y.
Hemmer, Annaleen, R-2056, Box 318, Shelby, Mont.
Higgs, Meda L., R-1391, Ellisville, Miss.
Hinton, Mary E., R-1352, R.R. 4, Corinth, Miss.
Horsh, Esther R., R-61, 3212 W. St., Lincoln, Nebr.
Horton, Emily G., R-1383, 53 Oakwood St., Albany, N. Y.
Irvine, Marian A., R-1065, 718 Superior St., Watertown, N. Y.
Jackson, Catherine M., R-960, 527 W. Ganson St., Jackson, Mich.
Jensen, Eva J., R-742, Downsville, Wis.
Johnston, Catherine M., R-2223, 64 Newark Ave., Bloomfield, N. J.
Jones, Harriet T., R-881, 8433 W. Hayes Ave., West Allis, Wis.
Jubb, Ruth A., R-1103, 423 W. Barnes Ave., Lansing, Mich.
Kane, Elizabeth A., R-778, 3827 North Prospect Ave., Milwaukee.
King, Grace R., R-1307, R.D. 3, Madison 5, Wis.
Kleffner, Rita F., R-1137, 1236 17th St., Portsmouth, Ohio.
Klimesh, Marcella E., R-902, 412½ Second St., Jackson, Minn.
Krejci, Helen D., R-1102, Fairmont, Nebr.
Lightbody, Vivian F., R-1131, 608 E. Court, Charles City, Iowa.
Linholm, Lillie I., R-519, R.R. 1, Marvel, Ala.
McClave, Harriet B., R-880, Box 125, Fort Lupton, Colo.
Meggers, Ann M., R-1358, McGregor, Iowa.
Meyer, Maryethel, R-255, 1587 Ivanhoe St., Denver.
Moen, Margaret L., R-1412, Hanks, N. D.
Nissen, Clara L., R-2336, 555 E. Grand River Ave., East Lansing, Mich.
Northington, Margaret A., R-2035, Tennille, Ga.
Ostberg, Ena D., R-470, Lolo, Mont.
Pearson, Georgiana, R-2021, Stratham, N. H.
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Pontius, Ruth E., R-520, 805 E. State St., Ithaca, N. Y.
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Richards, Betty R., R-1134, Bridgewater, S. D.
Richardson, Dorothy M., R-360, 400 S. First St., Cripple Creek, Colo.
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Spoklie, Mildred B., R-1296, Westby, Mont.
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Sutton, Helen S., R-2051, 704 S. 13th St., Corvallis, Oreg.
Taylor, Frances P., R-1346, P. O. Westville, Hampstead, N. H.
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Triplett, Mary A., R-929, 5209 Edmondson Ave., Baltimore.
Walker, Mabel A., R-2043, 215 S. Cunter, Vinita, Okla.
Walsh, Genevieve M., R-583, 306 Duquesne Ave., Trafford, Pa.
Ward, Marion G., R-1217, 76 Hawthorne Ave., Bloomfield, N. J.
Weagly, Josephine E., R-869, Middletown, Md.
Whelan, Mary F., R-1159, 320 Brook Rd., Milton, Mass.
White, Elizabeth A., R-1025, 403 Stanley St., Middletown, Ohio.
Williams, Dorothy J., R-1135, 4476 N. Larkin St., Milwaukee.
Williams, Nellie W., R-1221, R.R. 2, Gladys, Va.
Williams, Ruth M., R-1375, 3007 W. 71 St., Seattle.
Yakulis, Irene L., R-154, 340 McKinley Ave. E., Vandergrift, Pa.
Yokela, Edith M., R-1434, 3524-14th Ave., Oakland, Calif.

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Charko, Harriet H., R-2286, 34 Sterling St., Worcester, Mass.
Ellen, Dorothy H., R-1244, % Mrs. Max Hampton, Booneville, Ark.
Kreps, Sonya F., R-2145, 449 Valley View Rd., Englewood, N. J.
Littlejohn, Edna, R-1177, 42 Main St., Deposit, N. Y.
Lindblad, Dorothy L., R-1397, 22 Wyola Dr., Worcester 3, Mass.
Malszewski, Victoria E., R-2016, 116 Mankato Ave., Winona, Minn.
Pine, Cynthia C., R-1231, 727 Park Ave., River Forest, Ill.
Sandmeyer, Kathryn M., R-2069, 905 S. Evergreen St., Kankakee, Ill.
Schmidt, Dorothea, R-2256, 5 Salem Pl., Livingston, N. J.
Schor, Sylvia B., R-2243, 3514 Rochambeau Ave., Brooklyn, N. Y.
Shugren, Chartley M., R-1432, 2700-25th Ave., Oakland, Calif.
Silverstein, Ramona R., R-1209, Roosevelt Hotel, Minot, N. D.
Smith, Margaret, R-2344, 1226 Delancy St., Orlando, Fla.
Spragg, Doris M., R-2074, 905 Washington Ave., Red Oak, Iowa.
Webb, Suzanne H., R-1406, 801 Greeley Ave., Webster Groves, Mo.
Zuelsdorf, Marion M., R-1284, Markesan, Wis.

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Book Reviews

Physical Chemistry of Cells and Tissues. By Rudolf Höber, University of Pennsylvania School of Medicine, with the collaboration of: David I. Hitchcock, Yale University School of Medicine; J. B. Bateman, Mayo Clinic; David R. Goddard, University of Rochester Biological Laboratories; and Wallace O. Fenn, University of Rochester School of Medicine and Dentistry. Philadelphia: The Blakiston Company, 1945. Cloth. Pp. 676. Price $9.

"This book has grown to its present state of publication during more than three years of war time. Glanced at superficially, its outlines may appear to comprise a well-defined entity. However, those who have contributed to its growth are aware of many a wound inflicted upon its form by the war and of many a defeat, the scars of which are conspicuous enough, though they have not abolished the integrity of the basic idea.

"The subject of the book is physiology; not 'physiology from above,' but 'physiology from below'; not physiology originated essentially to fill human needs and help suffering individuals, but physiology as a branch of physical chemical science dealing with life as a physical, though exceedingly complex system, that may be subjected to scientific analysis like any other natural object."

The foregoing from the Preface serves to introduce the basic idea which animated the writing of this book, namely: to anchor physiology even deeper in physical chemistry—even closer to fundamentals—and to point out that chemistry has more and more become a branch of physics.

In the Introduction, the textbooks of physical chemistry available in the English language are grouped into the elementary, the intermediate, and the advanced; and the reading of one, classed as elementary, is a prerequisite, accompanied by the use of an intermediate or advanced text, to an understanding of the book under review, a book which is notable for its wealth of references to the German literature. The sections contributed by the author and a list of distinguished collaborators are divided under the following headings: Selected Principles of Physical Chemistry; Large Molecules—Their Physicochemical Properties and Their Architectural and Functional Significance in Living Matter; Introductory Remarks Concerning the Architecture of Protoplasm; The Surface of the Protoplast, Its Properties and Its Architecture; Influence of Some Extracellular Factors on Cellular Activity; The Respiration of Cells and Tissues; Contractility; Passive Penetration and Active Transfer in Animal and Plant Tissues.

How to Cook and Eat in Chinese. By Buwei Yang Chao. New York: Asia Press, The John Day Company, 1945. Cloth. Pp. 262. Price $3.50.

Once in a very great while, among the many new cookbooks published, we find one that is really of cultural value—one that could be used as required reading for home economics students and all others seriously interested in cookery as one of the great arts. Such a book is this, dignified by a preface penned by Pearl Buck, who responded to the reading of the manuscript by dropping it (the ms.) in the middle of a work day and hurrying off to the kitchen to cook a Chinese meal!

The keynote of the book is a quoted observation of Confucius: "There is no one who does not eat and drink. But few there are who can appreciate taste." In a very few words, the author, Mrs. Chao, tells the secret of good Chinese cookery, in fact of all good cookery: "the best use of the eating material," so that anything which is added to the main ingredient merely enhances its flavor and does not overwhelm it.

Chinese cookery, perhaps more than any other, has stressed the art of *blending* the foods in a dish, in contrast to *flavoring*. And it has taken the Anglo-Saxon centuries to learn how to cook vegetables with little or no waste of substance or flavor—something the Chinese seem always to have known.

Mrs. Chao, who happens to be a physician as well as a cook—not at all an unfortunate combination of arts—is also, it seems, a wit, and with more than her fair share of the wisdom of Confucius. Delicately, yet with a sharply satirical touch, she puts the self-satisfied Anglo-Saxon and the 100 per cent American in his place, even floors him at times, in her discussion of meal systems and table manners. For instance, the Chinese have learned that hot soups, hot soup noodles, etc. are best when sucked in with as loud a noise as possible—a practice frowned upon among those who believe that soup should be seen but not heard. Yet Mrs. Chao sadly confesses that she cannot bring herself to blow her nose in public, as Americans do, since "this operation tends to be much louder than eating noodles and sounds much less inviting."

No wonder Mrs. Buck terms the book a contribution to international understanding—for the foregoing is merely a fair sample!

But we digress. It must not be overlooked that this is a cookbook, carrying all the essential information on basic ingredients, flavorings and cooking materials, utensils, methods, recipes, meals and menus pertaining to that highly developed art, Chinese cooking.

How to Carve Meat, Game and Poultry. By M. O. Cullen. New York: Whittlesey House, 1945. Cloth. Illustrated. Pp. 209. Price $2.

This little book, written in popular style by the meat carving expert of the National Live Stock and Meat Board, is intended primarily to bolster the self esteem of the head of the family whose task it may be to carve that standing rib roast in the presence of the most critical guests, with an aplomb that will "satisfy the remnants of the baronial grand manner that still linger in every man's heart." The dining room conventions connected with carving are carefully described, such as the question of whether to stand or sit, the correct arrangement of platter, plates, and auxiliary equipment, how to distribute the choice portions, and how to avoid the "evil of the staggered slice." A brief chapter on selecting meat at the market is followed by one on mastering the use of the blade, in which it is sug-

BY Mary I. Barber OF KELLOGG'S

THE TAMING OF A VITAMIN

Director, Kellogg's
Home Economics Department
Battle Creek, Michigan

As YOU dietitians know only too well, thiamine is a very elusive fellow. He has a great affinity for water (Save that vegetable water!). He quickly gives up the ghost in alkaline solutions (Easy on the soda!). And cooking also brings thiamine to no good end.

Do you ever wonder then how we are able to promise you whole-grain values of thiamine in our restored Kellogg cereals?

Remember! Kellogg cereals are actually *cooked* cereals—thoroughly and carefully cooked and ready to be eaten. However, all these delicious, Kellogg-cooked cereals either are made from the whole grain or are restored to the whole-grain nutritive values of niacin, iron, and *thiamine.*

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Niacin and iron present no problem. They are not affected by heat and are added during the cooking process. But temperamental thiamine has to be "handled with kid gloves"! What we do is add thiamine—the very last thing.

If the cereal is a flaked cereal—Corn Flakes, Pep, or 40% Bran Flakes—the cereals are first cooked . . . dried . . . rolled into paper-thin flakes and then toasted to a delicious, golden-brown crispness.

If the cereal is Rice Krispies, the cooked rice kernels are lightly rolled and the flattened kernels popped in huge revolving ovens to many times their original size.

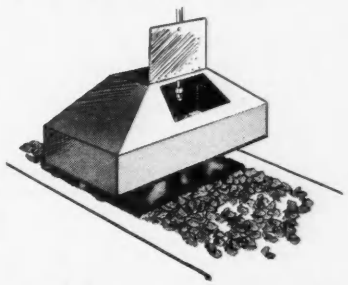
Only now — *after cooking* — are the cereals ready to be restored to their whole-grain levels of precious, elusive thiamine!

THIAMINE SHOWER

The spray which bathes the cereals with thiamine chloride resembles nothing so closely as a miniature shower bath! The cereal moves under the "shower" on a wide belt. Several sprays are used in order to reach every flake. And to further insure even and complete distribution the sprays are vaporfine.

FINAL CHECK-UP

And now the carefully regulated, carefully inspected process of manufacture is over! The thiamine-sprayed and niacin and iron-restored cereal is safely on its way to the packaging machine.



As a final precaution, sample packages are taken at random from each day's output and chemically analyzed to make certain that the vitamin content of the cereal is up to or exceeds the amounts printed on the package!

Yes, indeed! You can be *sure* of getting the thiamine promised by Kellogg's!

Mary I. Barber, DIRECTOR
HOME ECONOMICS DEPARTMENT

SEE THE VALUES IN THIS KELLOGG BREAKFAST BOWL

KELLOGG'S CORN FLAKES (1 Ounce)
BANANA (1 Average)
WHOLE MILK (4 Ounces) SUGAR (1 Teaspoon)

	RECOMMENDED DIETARY ALLOWANCES[1]	NUTRITIVE VALUES CORN FLAKE CEREAL BOWL	NUTRITIONAL CONTRIBUTION IN PERCENTAGES OF RECOMMENDED DIETARY ALLOWANCES[1] (5% 10% 15% 20%)
CALORIES	2,730	305	11%
PROTEIN	65 grams	7.4 grams	11%
CALCIUM	.9 grams	.143 grams	16%
IRON	12 mgs.	1.32 mgs.	11%
VITAMIN A Value	4,600 I.U.	543 I.U.	12%
ASCORBIC ACID	70 mgs.	11.3 mgs.	16%
THIAMINE	1.5 mgs.	.2 mgs.	13%
NIACIN[2]	15 mgs.	1.3 mgs.	9%
RIBOFLAVIN	2.2 mgs.	.3 mgs.	14%

[1]Allowances suggested by the Food and Nutrition Board of the National Research Council for 17 age- sex- and activity- groups were weighted by the estimated number of persons in each group in 1943.
[2]Allowance suggested for moderately active man, recommended dietary allowances, revised 1945, National Research Council.

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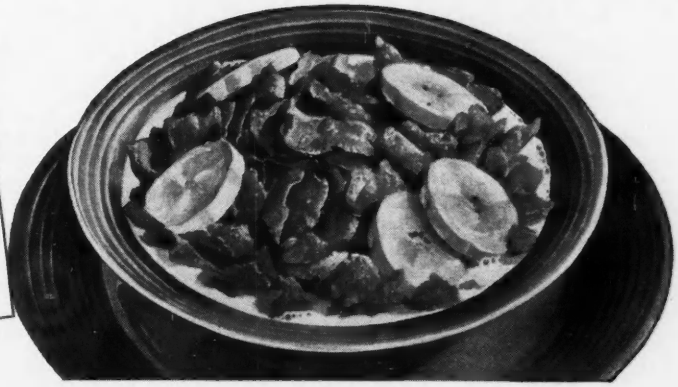

gested that cutting up a chicken for fricassee and slicing bread in various thicknesses in the privacy of one's own kitchen will increase one's accuracy and skill. How to select, sharpen and care for the tools of the carver are described in another chapter.

All of the foregoing, as well as the last chapters on meat anatomy, poultry selection, and factors in making meat tender, make interesting and profitable reading for anyone who may have to carve either in the kitchen or at table. The middle section of the book, however, which includes step-by-step directions, will be most useful if used as a manual to be referred to when unfamiliar cuts are about to be served. (How tactfully to persuade father to study up on the fine points just before serving time is one question which the author has overlooked.)

The book covers so much really practical information and includes carving instructions for so many cuts and so many kinds of poultry and game not found in the usual textbook or chart, that it should make a welcome addition to any good cook's library.

Men in Aprons. By Lawrence A. Keating. New York: M. S. Mill Co., Inc., 1946. Cloth. Pp. 186. Price $2.

It is unfortunate but true, in this reviewer's experience, that men who write cookbooks seem unable to resist what the adolescent might term a "corny" style in writing—apparently laboring under the naive belief that this makes their offering "he-mannish" and at the same time amusingly helpful. And in order to make it clear that the great man has unbent from his Olympian heights to the sphere of the little woman, more than a few vulgarisms are thrown in. Examples found in this book are: "Hold the glass well below the punctured can like a soda jerker pours and let 'er go," and such sophomoric lines as "links should be covered with boiling H_2O," and "hen fruit is almost synonymous with breakfast"—the last, one cannot deny, is perhaps the most profound observation in the book under review.

In spite of all this, our early upbringing forces us to admit that some of the book has merit, chiefly the chapters masquerading, not too obscurely, under the headings, "How Dry I Am"; "To Forks, My Lads!" (the latter of course the uninspired would merely label "helpful dinner suggestions" and let it go at that); and "With Rod, Gun and Skillet." With this final sweet-sour note, we close the book.

Milk and Milk Products. By Clarence H. Eckles, W. B. Combs, and Harold Macy. Third edition. New York: McGraw-Hill Book Company, Inc., 1943. Cloth. Illustrated. Pp. 414. Price $3.50.

The third edition of this textbook for college courses in dairy science covers thoroughly such subjects as the constituents of milk, factors influencing composition, properties of milk, milk and dairy products as food, microorganisms. The Babcock test for determining fat in milk and cream is covered in a separate chapter, as are also such topics as the manufacture of various dairy products. In short, this is the whole story of milk from cow to consumer, with no attempt to omit or simplify the technical aspects. The chapters on the manufacture of ice cream and cheese, and that on testing milk products should be of special value to the nutritionist and dietitian. The Appendix should also be useful, with its outline of methods for bacteriological analysis of milk, and many tables.

Soybeans and Peanuts. By Karla Longrée, Ph. D. Hampton, Va.: Hampton Institute Press, 1945. Paper. Pp. 47. Price 20 cents.

Lest the progress made in utilizing the soybean and the peanut in everyday cooking be lost, now that the war is over, a study was undertaken at Hampton Institute to discover how these foods might be incorporated in dishes not too unfamiliar to people who might most benefit from their use. Extensive work in experimental cookery brought forth a number of recipes which have been judged and found acceptable by those making the experiment, and others. The author, having tried many soybean recipes published in various magazines and booklets on wartime cookery, was convinced that a common mistake made was the mere substitution of soybeans for navy, kidney, or Lima beans, without an appreciation of the fact that the composition and texture of the soybean are very different from those of other beans. The high fat content of the soybean requires special consideration, and bacon and other fatty flavorings must be used sparingly in order to avoid dishes that are sickeningly rich and hard to digest, according to the author.

The first part of the booklet gives information on the nutritive value, and general information about cooking soybeans and peanuts and preparing products such as soybean milk, curd, and sprouts. The second part is a compilation of 51 original recipes, all with numbered steps, and practical for use in cooking classes or in the home. Incidentally, the author holds a Ph. D. degree from both the University of Berlin and Cornell University.

Meat 3 Times a Day. By F. J. Schlink and M. C. Phillips. New York: Richard R. Smith, 1946. Cloth. Illustrated. Pp. 194. Price $2.50. Special edition limited to Consumers' Research, Inc. subscribers, $1.50.

According to the Introduction, the ideas set forth in this book have been a slow evolutionary growth from the work of the authors in compiling and editing books and articles on food questions, and the food sections of the *Annual Cumulative Bulletin of Consumers' Research*, for a period of more than ten years. The introductory chapters are historical, telling briefly about the use of meat by our ancestors both in primitive times and in the early days in America. Several interesting old prints are included, also some menus dating back to the beginning of the 19th century. The remainder of the book, with the exception of a chapter on "How to Buy and Cook Meat" is devoted to a nontechnical explanation of the value of meat in the diet. Though these sections are not annotated, an extensive bibliography is appended.

Obviously the authors of *Meat 3 Times a Day* are against the policy of decreasing meat production in order to increase the total supply of food produced in this country, and they believe that the latter can be accomplished while at the same time increasing the supply of meat. It is characteristic of Americans, they say, to get what they want and if they want more meat they will find a way to produce it. "Instead of talking about how low our meat consumption can be cut and conducting researches to discover whether or not an ounce or two a day is sufficient, we should be working at increasing it to a pound a day, or even more, particularly for those who work at hard manual labor."

Your Diabetes and How to Live With It. By Floyd L. Rogers, M.D., and Ruth M. Leverton, University of Nebraska. Leatherette, circla-bound. Pp. 51. Price $1.

The authors of this little booklet have attempted the difficult task of simplifying the problem of the management of diabetes for those afflicted with this disease. The book is addressed exclusively to the patient and thus succeeds rather better than many others have in presenting information understandable to the average diabetic.

It takes sound logic and a forceful approach to convince those whose therapeutic care calls for dietary restrictions, and the authors haven't overlooked this. On page 30 we read: "There will be times when the diabetic is tired of his diet and discouraged with the idea of having to follow it indefinitely. This is no more reason, however, for him

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PHOSPHORUS	0.939 Gm.	VITAMIN D	417 I.U.
IRON	12.0 mg.	COPPER	0.50 mg.

*Based on average reported values for milk.

to go on an 'eating jag' than for him to walk in front of a speeding automobile because he is tired of having to watch for traffic when he crosses the street." And on page 31: "A diabetic diet is not like a money allowance where it is an advantage not to spend it all. For a person with diabetes not to use all his food allowance each day can be just as dangerous and sometimes more dangerous, than for him to eat more food than he is allowed."

The content is sound; however, more skilful attention to typographical arrangement probably could have materially aided the reader in absorbing and practicing the rules laid down for his guidance. Nine sample diet allowances for one day, with values ranging from carbohydrate 120 gm., protein 50 gm., fat 60 gm., to carbohydrate 130 gm., protein 75 gm., fat 45 gm. are included.

Anatomy and Physiology. By Frederic T. Jung and Elizabeth C. Earle. Third edition. Philadelphia: F. A. Davis Company, 1945. Cloth. Illustrated. Pp. 829. Price $4.

This book is distinguished by its 338 excellent illustrations, many in full color, and the attractive, logical, and highly legible quality of its typographical arrangement.

Intended primarily for schools of nursing, it lends itself well in other fields of preparatory education as a reference or standard text—especially for those students, judged by the Preface, who are upset by any but the most elementary arithmetic in books of this type. In brief, the book is highly informative and adequately so, yet it avoids the ponderous and burdensome technicalities which overwhelm many students of nursing.

Fundamental Principles of Bacteriology. By A. J. Salle. Second edition. New York: McGraw-Hill Book Company, Inc., 1943. Cloth. Illustrated. Pp. 643. Price $4.

According to the Preface, the advancements in all phases of bacteriology since this book was first published in 1938 made it necessary thoroughly to revise and entirely rewrite the book. The most significant changes concern the following: the morphology of bacteria; the microscope, including a brief discussion of the newer results and possibilities with the electron microscope; the effect of environment upon bacteria; the nutrition of bacteria, including a discussion of the various growth factors or vitamins required by organisms; differentiation and classification of bacteria; bacteriology of air; bacteriology of soil; bacterial and virus diseases of plants; and specific infections.

Considerable more textbook material has been incorporated in this edition. Because of this fact it was considered advisable to separate the laboratory procedures from the text material and these have been incorporated into a laboratory manual to accompany the textbook.

This is an excellent, comprehensive textbook for college courses in bacteriology.

THE LABOR PROBLEM IN HOSPITALS

AT ONE TIME the labor problem did not exist in hospitals so acutely as at present, even though hours were often longer, wages poor, and living conditions far from perfect. The adoption of the Hetherington Scale in most hospitals has resulted in working hours more comparable with those in other industries. It is still, however, often necessary for the staff to work in split shifts and they do not like working in the evenings or at week-ends. The wages paid by hospitals are still not so good as those in many industries, nor is there the same opportunity for collecting tips.

Owing to changed conditions during the war many women have been living very different lives from their former ones—travel, regular periods of leave, meeting varied and interesting people, and food and living accommodations provided. Therefore they have less inclination for hospital work which can offer no such attractions. Many will have a gratuity on demobilization and can therefore afford to be independent for a few months while they have a good time and try to find a job requiring the minimum of work and giving the maximum free time and wages. Fundamentally, of course, their whole attitude towards work or towards their obligations to the rest of the community as a whole is wrong. . . .

It seems obvious that some form of control of labor will be the only solution to the problem. But to what extent are we prepared to submit to control of labor now that the war is over, and how far will the employees allow themselves to be controlled? Do we want to force people to work in hospitals and is the forced worker the right type to have in hospitals? The hospitals can help to a certain extent by providing good living conditions for all the staff. In many hospitals today there are no living accommodations at all for catering or staff, and one cannot expect a non-resident staff to travel long distances to work split hours.

These are the main problems connected with the very severe shortages which are found in the kitchens of many hospitals today. The future of dietitians in hospitals is largely bound up with the problem of efficient staffing. . . .With a few exceptions we cannot be proud of the catering side of our hospitals. We were hampered in our efforts to improve matters, previously, by the hospital authorities themselves, who, in many cases were not willing to spend money for equipment and staff. Now that we have largely combatted that problem by proving the successful results which can be gained from a studied expenditure for staff and food, how can we solve the next problem in our path—that of a staff able to cope with the new ideas in hospital catering?—*From an article by B. Needham in the Autumn 1945 News Letter of the British Dietetic Association.*

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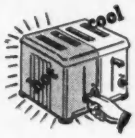

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Current Literature

Contributed by Janet Engebretsen and Janette C. Carlsen, Dietary Department, Johns Hopkins Hospital; Quindara Oliver Dodge, Women's Educational and Industrial Union, Boston; and the Journal staff.

AMERICAN JOURNAL OF DIGESTIVE DISEASES

Vol. 13, January 1946

* Management of chronic constipation. M. H. Streicher.—p. 1.
* Modern concept of congenital megacolon. E. Meuhsam.—p. 3.

Vol. 13, February 1946

* Endocrine aspects of obesity. M. A. Goldzieher.—p. 40.

Chronic Constipation. One of the essentials in the management of constipation is recognition of the fact that all patients in this group have been self-treated, that most of them have taken enemas or too much medication, and many take medicines at wrong hours; it is therefore best at the onset to discontinue all previous programs and to start anew. The prescribed treatment includes establishing and correcting the physiology in each patient over a 24-hr. period; outlining a diet in keeping with basal requirements and supplementing essentials needed in amount of residue and vitamins (conclusion reached was that bran administered orally aids bowel activity); if the simple procedures do not correct the condition it becomes necessary to resort to medications—the choice of the laxative, the amount used, and the hour of intake are paramount. Various types of laxatives and their use are discussed.

Congenital Megacolon (Hirschsprung's Disease). A discussion of this complex disease is presented, including publications to date. Of great importance in treating this condition and preventing further damage is the diet. All food which favors constipation should be avoided. Breast feeding should be continued as long as possible since the transition period from breast to artificial feeding is a dangerous one.

Endocrine Aspects of Obesity. A discussion of other factors as well as endocrine aspects is presented, such as: excessive food intake due to abnormality of appetite and delayed satiation; decreased caloric expenditure due to inactivity; decreased basal metabolism; decreased specific dynamic action of protein; decreased "luxus consumption"; decreased heat loss and greater economy in muscular work, and abnormal intermediary metabolism; disturbance of the fat tissue as lipophelia; decreased fat metabolism, and abnormal fat metabolism; water retention; heredity and constitution; precipitating factors and critical periods as puberty, pregnancy, menopause and convalescence. Reports on anatomical changes of the endocrine organs in obesity are reviewed. Their inconsistency does not permit definite conclusions. However, it is concluded that weight reduction can be accomplished by diet alone, provided the caloric intake is low enough. Better clinical results are obtained with less rigorous restriction of food intake if suitable endocrine therapy is added. Regional fat deposits also yield better to such combined treatment than to mere dietary weight reduction.

AMERICAN JOURNAL OF DISEASES OF CHILDREN

Vol. 70, November-December 1945

* Treatment of the diabetic child with particular reference to the use of globin insulin. R. L. Jackson and C. B. McIntosh.—p. 307.

Treatment of Diabetic Children. Diabetic children differ from adults in that generally they are quite undernourished when the disease is discovered, and the onset is rapid and more severe. The nutritional requirements of children vary with growth; they are more susceptible to infections; their exercise is more erratic; and they are much less stable emotionally than adult diabetics. Their need for insulin control is universally recognized; only the level of control and the type of insulin to be used are controversial factors. In a study of various types of insulin to determine the best level of control, it was found that 4 doses of regular insulin or 2 doses of regular plus one of globin with zinc kept the children at the best level of control—that is, free from insulin reaction or hypoglycemia.

AMERICAN JOURNAL OF THE MEDICAL SCIENCES

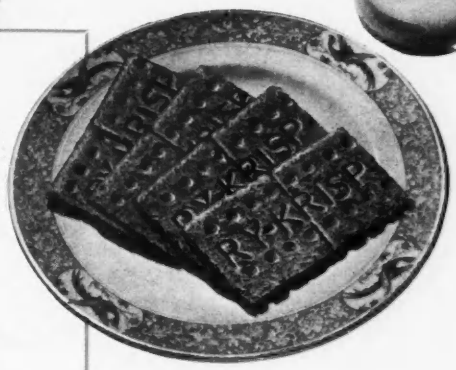
Vol. 211, February 1946

* Why certified milk? J. H. Brown.—p. 144.
* Amino acids in the production of plasma protein and nitrogen balance. S. C. Madden and G. H. Whipple.—p. 149.
* Human utilization of biotin from various diets. J. Gardner, H. T. Parsons and W. H. Peterson.—p. 199.

Certified Milk. From 1925 to 1943 there has been a series of 819 milk-borne epidemics of food poisoning, typhoid fever, gastro-enteritis, dysentery, brucellosis, and diphtheria: 1 was due to certified raw milk, 712 to other raw milk, 62 to pasteurized, 3 to canned, 2 to boiled, and 39 unknown. No outbreak was ever attributed to grade A pasteurized milk until 1938; there have been 5 since. Some strains of staphylococci withstand heating at 60°C. for 1 hr.; enterotoxin resists heating at 95°C. for 20 min. It is therefore obvious that healthy milkers and animals, plus cleanliness, are highly important in preventing outbreaks of food poisoning. Pasteurization, even properly applied, does not destroy all organisms and it is not always properly done. Many grade A pasteurized milk samples show bacterial counts below the 30,000 per cc. "safety line," but even that does not make the milk "safe." The author presents several reasons why certified milk is to be preferred.

Production of Plasma Protein. The body can make plasma protein and maintain nitrogen balance when the sole source of nitrogen is a protein digest or a mixture of the 10 amino acids essential for growth. Synthetic amino acids permit greater flexibility than protein digests; they are better tolerated parenterally and more palatable orally than various other digests tested.

Utilization of Biotin. Balance studies to determine



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biotin utilization were carried out on a group of college women on diets containing varying amounts of baker's yeast and beef liver. Careful control was kept during the experimental periods. In nearly every instance biotin output exceeded intake, indicating a probable synthesis of biotin in the body. Diets containing the lowest amounts of biotin produced larger outputs than the high biotin diets; beef liver diets produced the greatest urinary output of biotin.

AMERICAN JOURNAL OF PUBLIC HEALTH

Vol. 36, March 1946

* Report of the Committee on Foods (except milk). Public aspects of dehydrated foods. H. W. von Loesecke, chairman.—p. 248.

Dehydrated Foods. The fundamental difference between the bacteriology of dehydrated foods and canned foods is that the former are never sterile. From data available, neither dysentery organisms nor *Cl. botulinum* have ever been found in dehydrated foods but the presence of *Salmonella* and staphylococci has been demonstrated. The significance of their presence is complicated by the fact that it is not known whether their number is sufficient to cause symptoms of poisoning. Nor is it known whether *Cl. botulinum* can multiply under conditions prevailing when foods are dehydrated; but the theoretical possibility cannot be dismissed. Because of their proximity to the ground, vegetables are liable to contamination by soil bacteria, as well as infection from human sources by handling during preparation for dehydration. Washing and subsequent blanching will reduce the flora, but recontamination will occur during traying and packing. It has been found that overloading of the trays in the dehydrating process contributed to a large bacterial count in the finished product. Other factors were post-blanching contamination by unclean hands of the workers, dirty trays and other inadequately cleaned equipment, and the use of polluted water. There are no bacteriological standards for dehydrated vegetables. The Quartermaster Corps controls the quality of its dehydrated products by means of specifications, plant supervision, product inspection, and laboratory inspection, which does not include bacterial counts. The moisture content at which dehydrated vegetables are dispensed would probably not permit bacterial growth.

Bacteria specifications, which at present should be considered as tentative, have been established for the purchase of dried egg powder by certain government agencies. The specifications of WFA require that the plate count should not be in excess of 300,000 per gm., and *Escherichia coli* should not be present in 0.001 gm. The Quartermaster Corps' tentative specifications permit a maximum plate count of 200,000 per gm. and a yeast-mold count of not more than 100 per gm. Higher counts are accepted with a penalty. In 1943 the British Ministry of Food established standards for grade A and grade B powders. Recent researches indicate that direct counts rather than plate counts more accurately reflect the conditions under which the eggs were handled. In spite of the large amount of work undertaken, the source of *Salmonella* in dried egg powder apparently remains unknown. If reconstituted eggs are allowed to stand overnight there would be danger of multiplication of bacteria; for this reason the reconstitution period should not exceed 4 hr. In general, bacterial flora in dried egg powder decrease during storage if the humidity is not excessive.

Dehydrated fish should not be confused with salted, dried, or smoked fish. The former is prepared by steaming and grinding the fish and removing moisture under controlled conditions of humidity and temperature. During dehydration the fish may or may not be smoked. So far as is known, at present fish is not being commercially dehydrated in the United States.

There are no bacteriological standards in the United States for dehydrated meat. Specifications do, however, require a standard precooking treatment of a minimum of 30 min. at not less than 165°F. internal temperature. The British Ministry of Food Advisory Bacteriological Committee has set a provisional standard and their specifications are in effect for all dehydrated meat now obtained by the British. It is quite likely that danger from food poisoning bacteria in dehydrated meat is controlled chiefly by the moisture content of the product, and so long as the moisture content remains at 10% or below in any part of the product, the problem of bacterial food poisoning is probably nil. If dehydrated meat has a moisture content of less than about 15% (calculated on a fat-free basis) microorganisms cannot develop. In the rehydration of meat there is apparent danger of food poisoning, if such rehydration is prolonged; reconstituted meat should not stand more than 1 or 2 hr. before being cooked. In general, there is a decrease in bacterial count during storage.

ARCHIVES OF INTERNAL MEDICINE

Vol. 77, January 1946

* Blood: A review of the recent literature. F. H. Bethell, C. C. Sturgis, R. W. Rundles and M. C. Meyers.—p. 80.

Blood. Continuation of the reviews of recent literature on blood. The article deals with leukemia, infectious mononucleosis, and lymphomatoid diseases and related disorders.

BRITISH MEDICAL JOURNAL

No. 4435, January 5, 1946

* Ocular signs in the prisoner of war returned from the Far East. G. C. Dansey-Browning and W. M. Rich.—p. 20.

No. 4437, January 19, 1946

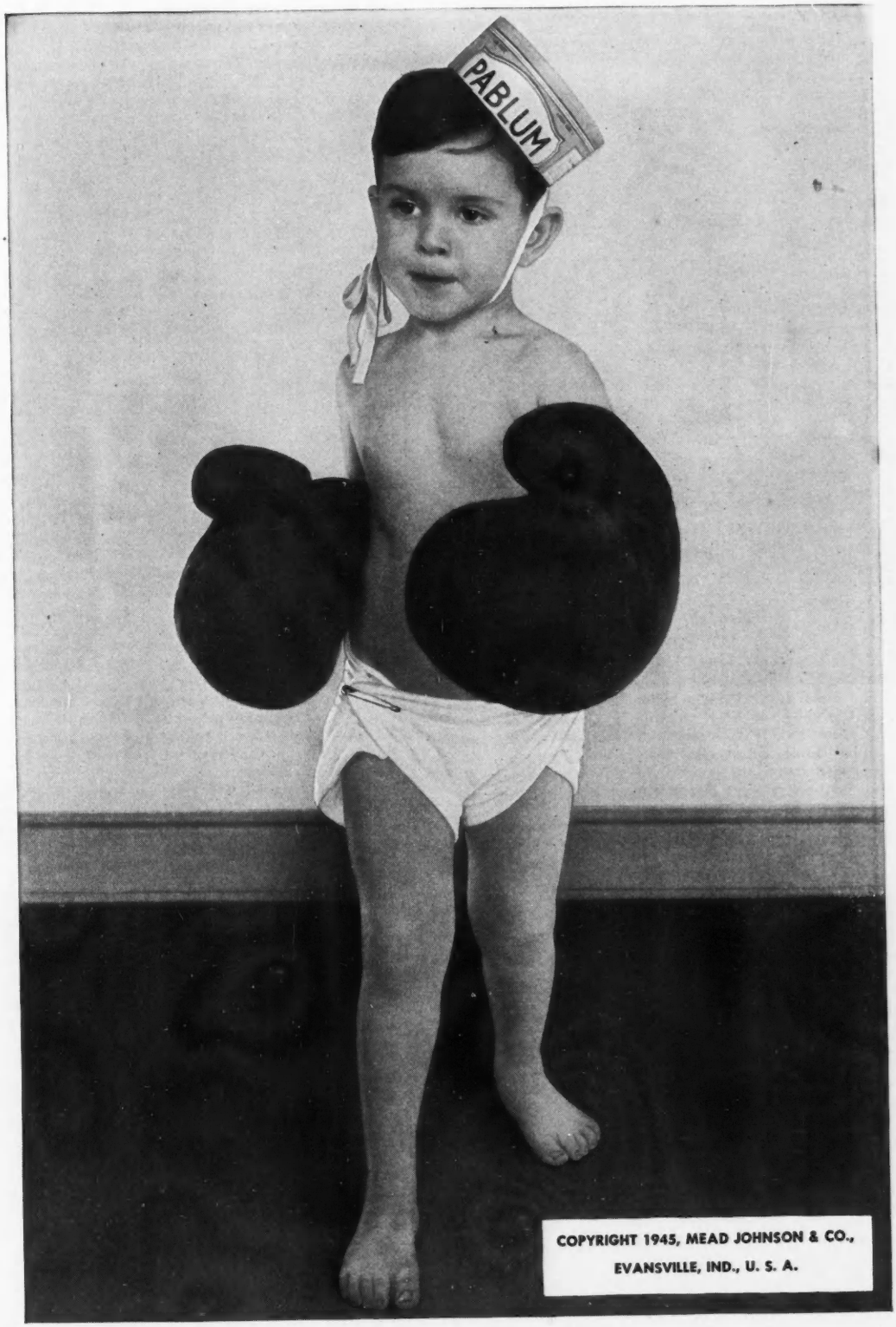
* 600 cases of sprue in India. K. D. Keele and J. P. Bound.—p. 77.

No. 4440, February 9, 1946

* Effect of a daily vitamin supplement on the health and development of children. E. R. Bransby, J. L. Burn, H. E. Magee and D. M. MacKecknie.—p. 193.

Ocular Signs and Beriberi. Of 30 men who were released at the recapture of Rangoon, two had suffered from "wet" beriberi, three others had had both "wet" and "dry" forms of the disease, and 22 had "dry" beriberi. The average duration of the disease was 6 months, and most of the men had noted that their sight was failing toward the end of their illness. A discussion of the ocular changes in these subjects is presented and the conclusion reached that deficiencies of vitamins B_1 and B_2, and probably A, appear to have played their part in the ocular signs of beriberi; and that bilateral optic nerve degeneration in beriberi is more common than the literature would indicate. As the optic nerve is a part of the cerebral nervous system, damage done to the nerve proper by the axial optic neuritis of beriberi is final, and any improvement of vision can be but slight.

Sprue in India. Reports 600 cases of sprue, including the clinical picture, investigations conducted, treatments used, and prognosis. The diet used in most cases was high protein, low fat and low carbohydrate. A series of 5 diets in ratios of protein 1, fat 0.5, carbohydrate 2, has been used as a basis. Diet 4, with protein 168 gm., fat 69 gm., carbohydrate 235 gm., calories 2234, most commonly used, is suited to all mild cases. When one realizes that milk diets, high carbohydrate diets, pure fruit diets have all been successful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in sprue, one is inclined to ask, What is the principle of dieting sprue? Constancy and regularity of diet are important in themselves. Any increase, particularly of fat or meat is often followed by a relapse. Liver, Marmite, yeast, and bananas are included in the diets for possible therapeutic effects. Because of the frequency of remission and relapse and the disassociation of signs and symptoms, making assessment of diet or drug therapy difficult, no definite conclusion is reached.

Vitamin Supplements. A total of 1620 children, aged 5 to 14 yr., attending elementary and secondary schools, were divided into 2 groups: Those in one group received on each school day for a year (1943–44) a vitamin capsule containing 4000 I. U. vitamin A, 1 mg. vitamin B_1, 2 mg. riboflavin, 20 mg. nicotinamide, 50 mg. ascorbic acid, and 600 I. U. vitamin D. The other group received a placebo free of vitamins. The vitamin supplement had no consistent effect on growth, strength, endurance, fatigue potential, incidence or severity of clinical conditions, hearing, or absenteeism from school. The vitamin supplement had a beneficial effect on gingivitis in one town but not in another. Dietary studies made in conjunction with the test showed that the average ascorbic acid intake in the diets was well below the National Research Council's recommended intakes, and that many of the children probably had intakes of less than 10 mg. daily over long periods of time. The absence of effect of the vitamin supplement and the generally good nutritional state of the children threw doubt on the validity of the National Research Council's standards.

CANADIAN JOURNAL OF PUBLIC HEALTH

Vol. 37, January 1946

* Observations on the calcium content of cow's milk. E. M. Semmons and E. W. McHenry.—p. 22.

Calcium Content of Cow's Milk. In an investigation of the difference between analytically determined and calculated calcium contents of meals, it was found that the actual calcium content was below the value obtained by calculation from the use of several tables of food composition. Since milk is the chief source of calcium in average Canadian diets, it seemed advisable to determine the calcium content of samples of milk commercially available in Toronto. It would appear that either the available milk has a subnormal calcium content or that the calcium content of milk as stated in most food tables is erroneous.

CANADIAN MEDICAL ASSOCIATION JOURNAL

Vol. 54, February 1946

* The relation of ascorbic acid intake to gingivitis. W. J. Linghorne, W. G. McIntosh, J. W. Tice, F. F. Tisdall, J. F. McCreary, T. G. H. Drake, A. U. Greaves and W. M. Johnstone.—p. 106.

Ascorbic Acid Intake and Gingivitis. The results of a series of studies conducted on RCAF personnel to investigate the effects of various nutrients on the incidence of gingivitis suggest that a diet containing 75 mg. ascorbic acid retarded the recurrence of gingivitis to a greater degree than 25 mg. ascorbic acid per day. There was no significant difference between the effect of a diet containing 10 mg. ascorbic acid and one containing 25 mg. The retarding effect on recurrence of gingivitis of a diet containing 75 mg. ascorbic acid was not significantly different from that of a diet containing 10 mg. plus 70 mg. ascorbic acid in tablet form.

ENDOCRINOLOGY

Vol. 38, February 1946

* Disturbances of water metabolism in vitamin deficiencies and effects of adrenal cortical hormones. R. Gaunt, M. Liling and C. W. Mushett.—p. 127.

Water Metabolism in Vitamin Deficiencies. Rats on a diet deficient in pantothenic acid show a lethargic diuresis when water is given by stomach tube, and a decreased resistance to water intoxication. These defects are remedied by the administration of either calcium pantothenate or adrenal cortical hormones. In view of the reported adrenal pathology in pantothenic acid deficiency the results are consistent with, but do not prove that adrenal hypofunction exists in this vitamin deficiency. A similar inability to handle water normally is seen in riboflavin deficiency, but only during the later stages when deficiency symptoms are severe.

FOOD RESEARCH

Vol. 11, January-February 1946

* Vitamin A retention in dried eggs as affected by compression and packaging in tin cans. B. B. Bohren and S. M. Hauge.—p. 39.
* An investigation of the characters of dried whole egg determining baking quality for cakes other than sponge cakes. D. W. Grover and J. R. Hawthorne.—p. 41.
* Improvement in digestibility of navy-bean starch. D. E. Bowman.—p. 49.
* Retention of carotene, thiamin, riboflavin, and niacin during large-scale food service of dehydrated carrots. E. Gleim, M. Albury, K. Visnyei, J. R. McCartney and F. Fenton.—p. 61.
* Ascorbic acid in strawberries during processing, frozen storage, and manufacture of Velva Fruit. H. J. Loeffler.—p. 69.

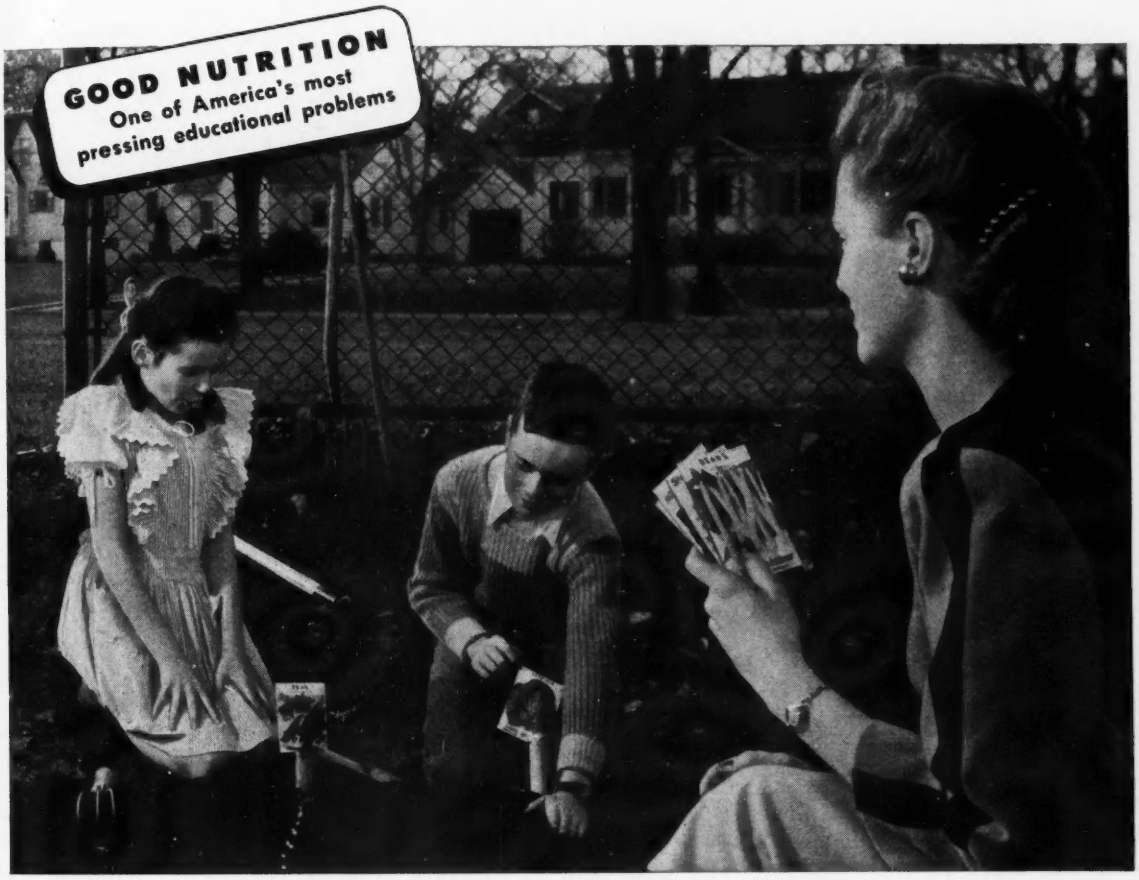
Vitamin A in Dried Eggs. Dried eggs stored either loose or compressed in waxed fiber cartons for 6 mo. at 20°C. or lower retained 62% or more of their initial vitamin A. At 37°C. they retained only 30%. Compressing the dried egg powder prior to packaging failed to have any beneficial effect on the retention of vitamin A during storage. Eggs sealed in tin cans retained about 75% of their potency, regardless of storage temperatures.

Dried Eggs for Cakes. While the quality of the cake made with any particular specimen of dried egg appears to depend, to some extent, on the baking technique employed, the results of this investigation show that the solubility of the sample is a good measure of the baking quality for cakes of the Madeira type, while the aerating power is of little value as an index of baking quality. Further experiments have shown that the presence of fruit in the cake does not affect this conclusion.

Navy Bean Starch. The starch of cooked navy beans is relatively resistant to digestion by pancreatic amylase. This unfavorable digestibility can be considerably decreased by preliminary acid treatment (concentrations of 0.1N to 5.0N) without destroying the attractiveness of the beans as a food.

Dehydrated Carrots. Little, if any, of the 4 vitamins was destroyed during dehydration. Most of the carotene, except in 2 of the 5 methods of preparation employed, was retained in the vegetable; from 52 to 75% of the thiamin; 55 to 89% of the riboflavin; and 42 to 58% of the niacin. Most of the rest of the 3 water-soluble vitamins was found in the cooking water.

Ascorbic Acid in Strawberries. Prime mature strawberries averaged 66 mg. ascorbic acid per 100 gm. on a syrup-free basis 3 months after freezing; immature fruit, 91 mg.; overmature fruit, 55 mg. per 100 gm. After storage, the concentration of ascorbic acid in the syrup was 65 to 75% of that in the drained whole berries and remained about the same despite prolonged storage. The sliced berries had on the average more than 57 mg. per 100 gm. on a sugar-free basis after 3 months of frozen storage. Whole or sliced strawberries frozen without added sugar or syrup did not lose ascorbic acid during freezing; whole berries in syrup and sliced berries with dry sugar, about 10 to 15%; whole berries packed in water, about 20%. Puréeing or flash-pasteurization of purée prior to freezing did not reduce ascorbic acid content over 5%. Whole berries in syrup and



DOES NUTRITION TEACHING GET RESULTS?

When 7 out of 10 children are found to be "good eaters" in one school and less than 3 out of 10 eat as well in similar schools nearby . . . it's news. And when we know that children in the first school received special teaching in nutrition, while those in the other schools did not . . . it's encouraging.

Following a nutrition emphasis program of several months, a special survey of eating habits was made last year in a typical rural elementary school in the midwest. Then results were compared with earlier surveys made in six similar schools in the same county, where no special emphasis had been given.

In the pre-taught school, the percentage of children having "good or adequate" diets was 69.5%. At the other six schools it was 25.3%. By specific food groups, the percentage of children getting adequate amounts was definitely better where nutrition had been emphasized than in the other schools . . . milk, 76.8% against 26.2%; eggs, 43% against 21.4%; green and yellow vegetables, 50% against 9.5%.

While results from a limited survey such as this are far from conclusive, they are nevertheless quite heartening.

General Mills is now printing posters, booklets and related teaching aids to help other elementary schools create a well-rounded program of health and nutrition education. For information, address:

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EVERY DAY'S DIET SHOULD INCLUDE THESE FOODS

GREEN AND YELLOW VEGETABLES . . . some raw, some cooked, frozen or canned. At least one serving a day.

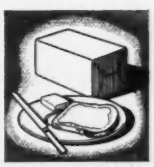
ORANGES, TOMATOES, GRAPEFRUIT . . . or raw cabbage or salad greens. At least one serving a day.

POTATOES AND OTHER VEGETABLE AND FRUITS . . . raw, dried, cooked, frozen or canned. Two or more servings a day.

MILK AND MILK PRODUCTS . . . fluid, evaporated or dried milk. One quart (or its equivalent) a day for children and expectant or nursing mothers; one pint a day for all others.

MEAT, POULTRY, FISH OR EGGS . . . or dried beans, peas, nuts or peanut butter. One serving of meat, poultry or fish a day, occasionally peas or beans instead. Three or four eggs each week.

BREAD, FLOUR, CEREALS . . . natural whole-grain or enriched or restored. Three or more servings a day.



BUTTER AND FORTIFIED MARGARINE . . . use for spreads and for seasoning as you like and as supplies permit.

In addition, all growing children and all expectant or nursing mothers should be provided with 400 units a day of Vitamin D in the form of Vitamin D milk (fresh or evaporated), fish liver oil or Vitamin D concentrate

sliced berries with dry sugar lost less than 5% of their ascorbic acid during the first 2 months of frozen storage; berries without added sugar or syrup, 12 to 15%; purée with added sugar, 12% during freezing, 3 months' storage, and defrosting. Without sugar the loss was 16%. In general, the consumer of frozen strawberries should obtain about 80% of the ascorbic acid of the original fruit. If defrosting is slow or if the strawberries are held several days at low temperatures after defrosting, the loss may be much greater than during freezing preservation. When sugared purée was manufactured into Velva Fruit, the loss of ascorbic acid was less than 5%.

JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

Vol. 130, February 23, 1946

* Folic acid for macrocytic anemia in relapse. T. D. Spies.—p. 474.
* Postoperative hypoglycemia. D. W. Blood.—p. 477.
* Death following intravenous injection of thiamine. I. M. Reingold and F. R. Webb.—p. 491.

Vol. 130, March 2, 1946

* Hypoglycemic fatigue. S. C. Karlan and C. Cohn.—p. 553.

Vol. 130, March 9, 1946

* Infectious hepatitis. C. L. Hoagland and R. E. Shank.—p. 615.
* Iron deficiency anemia. S. O. Schwartz and V. C. Flowers.—p. 622.
* Gastrointestinal symptoms from fat and sugar intolerance. L. Tuft and H. J. Tumen.—p. 624.
* Diabetic nocturnal diarrhea. E. P. Sheridan and C. C. Bailey.—p. 634.

Folic Acid in Anemia. Folic acid (synthetic *Lactobacillus casei* factor), a vitamin present in liver, yeast and other food materials, is a potent anti-anemic factor in certain types of macrocytic anemia in relapse. Folic acid performs a specific function in the maturation of the various cells of the bone marrow and has other obvious profound effects.

Postoperative Hypoglycemia. Of 3 unusual cases of severe postoperative hypoglycemia, 2 ended fatally. The third patient recovered and has remained normal to date. In spite of a consideration of the possible etiologic mechanisms, no explanation of the phenomena seems apparent. Although rare, the hypoglycemic state must be considered and a blood sugar level determined in any abnormal central nervous system response following a surgical procedure, even though it is a minor one.

Intravenous Injection of Thiamin. There have been several reports in the literature of adverse effects following the parenteral administration of thiamin hydrochloride. Most of the untoward reactions were in the nature of hypersensitivity to the vitamin, and in only one report was a death recorded. Recently another death occurred following the intravenous administration of a solution of thiamin hydrochloride, and since vitamins are now being introduced parenterally in large quantities, this case and a record of the autopsy are described.

Hypoglycemic Fatigue. In 9 cases of fatigue and dizziness due to hypoglycemia, the hypoglycemia was demonstrated by the intravenous glucose tolerance test and true blood sugar determinations. Dietary treatment (high proteins and complex carbohydrates) with frequent feedings was effective in alleviating the symptoms. No causal relationship between the hypoglycemia and the emotional status could be found. All cases of neurasthenia and fatigue should be investigated for hypoglycemia.

Infectious Hepatitis. In 3 groups of patients receiving supplements of methionine, choline and crude liver extract, respectively, and a diet high in protein and carbohydrate and moderately low in fat, no evidence of an accelerated recovery was obtained over that of a control series receiving the diet alone.

Anemia. The development of the anemia of iron deficiency is characterized by: a linear fall in the hemoglobin; and a fall in red blood cell count which lags behind the hemoglobin fall and results in a progressive dimunition in color index. The recognition of the "iron deficient" type of anemia is important because it casts etiologic, therapeutic and prognostic light on the underlying disease. In evaluating the type of anemia and in assaying its physiologic severity the accurate determination of the hemoglobin outranks the importance of the red cell count.

Fat and Sugar Intolerance. A group of patients had numerous gastro-intestinal symptoms, presumably the result of intolerance to fats and sugars. The symptoms consisted of epigastric fulness, belching, eructations, abdominal pain and bowel irregularities, notably diarrhea. These symptoms were encountered in patients who were known to have food allergies, but it is believed that the symptoms noted were due to "intolerance" to fats and sugars rather than to allergy in the ordinary sense. Intolerance to fats and sugars may be a more frequent cause of gastro-intestinal symptoms than is usually suspected.

Diabetic Nocturnal Diarrhea. Nocturnal intermittent diarrhea is a distinct syndrome which may occur in patients with diabetes mellitus. This condition may be a manifestation of diabetic neuropathy. Crude liver extract parenterally offers the most effective symptomatic treatment.

JOURNAL OF NUTRITION

Vol. 31, February 1946

* The significance of fatty infiltration in the development of hepatic cirrhosis due to choline deficiency. P. Handler and I. N. Dubin.—p. 141.
* Vitamin C content of market milk, evaporated milk, and powdered whole milk. A. P. Stewart, Jr. and P. F. Sharp.—p. 161.
* Studies on the nutritive value of fish proteins. I. Evaluation by the rat growth method and the Cannon method. H. J. Devel, M. C. Hrubetz, C. H. Johnson, R. J. Winzler, E. Geiger and G. Schnakenberg.—p. 175.

Choline Deficiency Cirrhosis. Diets high in fat, containing 4 to 5% casein with starch as the carbohydrate and supplemented with cystine and cholesterol, proved most suitable for the production of choline deficiency liver necrosis and fibrosis in albino rats. Thiamin deficiency or restricted food consumption prevented the accumulation of excessive liver fat and also liver necrosis. It is suggested that the hepatic necrosis and fibrosis of choline deficiency may be the result of chronic fatty infiltration. The ingestion of an adequate quantity of good protein protects the liver from the deleterious effects of chronic fatty infiltration but this protective capacity is not based upon lipotropic activity alone.

Vitamin C in Dairy Products. Pasteurized milk from consumers' homes and retail stores in a metropolitan area averaged 5.8 mg. and reconstituted evaporated milk from retail stores averaged 2.0 mg. total vitamin C per liter. Fresh powdered whole milk averaged 12.5 mg. total vitamin C per liter reconstituted. Samples stored at room temperature, air packed, retained 88.7, 85.5 and 49.8% of their vitamin C content after 3, 6 and 12 months, respectively. Raw milk entering the manufacturing plants averaged 17.1 mg. of reduced ascorbic acid per liter.

Nutritive Value of Fish Proteins. The mixed proteins of mackerel, sardine and tuna fish muscle were shown to afford growth superior to that obtained with casein in weanling rats. The superiority of mackerel protein is further attested by the fact that it causes greater recovery in weight and a more pronounced stimulation in hemoglobin regeneration than casein in rats rendered hypoproteinemic. Mackerel protein proved to have a potency equal to casein in causing a regeneration of plasma protein.

PROTEIN

and the Dietary of Kidney Disease

The fundamental concept, that nutritional requirements must be met in disease as well as in health, holds especially true in renal disease.[1] Because many affections of the kidney involve excretion of blood albumin via the urine, the intake of protein in former years was curtailed in a futile attempt to stem the loss of protein.

Modern nutritional science has emphasized the necessity for maintaining nitrogen balance even in the face of the severe albuminuria characteristic of lipid nephrosis.[2] Not only must the basic nitrogen requirements of the organism be met, but the urinary loss must be compensated for as well.[3] Only when this adjustment of protein intake is made can the plasma albumin be restored to normal levels and the associated edema overcome.

Meat is an excellent source of protein in the management of nephritis and nephrosis, not only because of the high percentage of protein contained but especially because its protein is of highest biologic quality, applicable for every protein need.

---

1 *Stare, F. J., and Thorn, G. W.: Protein Nutrition in Problems of Medical Interest, J.A.M.A. 127:1120 (April 28) 1945.*

2 *Stare, F. J., and Davidson, C. S.: Protein: Its Role in Human Nutrition; Introduction, J.A.M.A. 127:985 (April 14) 1945.*

3 *Anderson, G. K.: The Importance of Protein in Diet Therapy, J.Am.Dietet.A. 21:436 (July-August) 1945.*

The Seal of Acceptance denotes that the nutritional statements made in this advertisement are acceptable to the Council on Foods and Nutrition of the American Medical Association.

AMERICAN MEAT INSTITUTE

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JOURNAL OF PEDIATRICS

Vol. 28, January 1946

* Tables for predicting adult height from skeletal age and present height. N. Bayley.—p. 49.

Tables for Predicting Adult Height. Tables for predicting adult height from skeletal age and present height of children are given with directions and explanations for their use.

PUBLIC HEALTH REPORTS

Vol. 61, March 22, 1946

* The excretion of DDT (2,2-bis-(P-chlorophenyl)-1,1,1-trichloroethane) in man, together with clinical observations. P. A. Neal, T. R. Sweeney, S. S. Spicer and W. P. von Oettingen.—p. 403.

DDT. The ingestion of 11 mg. per kg. body weight of DDT dissolved in olive oil, corresponding to a total dose of 770 mg., did not cause detectable toxic effects in one normal individual. As in rabbits, part of the DDT ingested is metabolized to di(p-chlorophenyl)-acetic acid (DDA) and excreted with the urine. Under the conditions of this experiment the maximal excretion of this metabolite occurred on the second day; it decreased rapidly on the third and fourth days, and diminished gradually during the subsequent 10 days.

SCIENCE

Vol. 103, February 15, 1946

* Developing food acceptance research. W. F. Dove.—p. 187.

Developing Food Acceptance Research. Research in food acceptance was formally introduced into the Army's food supply program in November 1944. This article deals with the development, growth and future of food acceptance research.

SOUTHERN MEDICAL JOURNAL

Vol. 39, January 1946

* The effect of folic acid on sprue. T. D. Spies, G. G. Lopez, J. A. Menedez V. Minnich and M. B. Koch.—p. 30.

Vol. 39, February 1946

* The nutritional state of the civilian population of Stuttgart, Germany. J. M. Ruffin and C. E. French.—p. 112.

* A clinical study on the use of a protein supplement in treating persons with nutritive failure. T. D. Spies and M. M. Morey.—p. 117.

Folic Acid in Sprue. Since macrocytic anemia occurs in sprue, one of the authors was interested in finding out whether or not folic acid is effective in the treatment of this disease. It was deemed advisable to go to an area in which the disease was endemic. A special ward at the Calixto Garcia Hospital, Havana, was assigned. A detailed medical and dietary history was obtained and a careful physical examination made on the 3 patients selected for study. The patients were restricted to a diet excluding meat, meat products, fish and poultry. The following foods were allowed in any amounts desired: fruits and vegetables (either raw or cooked), salads made from fruits or vegetables, *viandas* (root vegetables found in Cuba), cereals, breads, butter or lard, sugar, and coffee. Each patient was given 200 mg. folic acid daily by mouth. These studies show that persons with macrocytic anemia of sprue in relapse are greatly benefited by the oral administration of synthetic folic acid. There is a spectacular increase in the reticulocytes on the fourth or fifth day after treatment is initiated. This is followed by a rise in red blood cell count and in hemoglobin content of the blood. Associated with the hemopoietic response is a striking gain in strength, vigor, and appetite.

Nutritional State of German Civilians. The state of nutrition as determined by this survey was fair. Marked weight loss has occurred only in the adult population, particularly in those over fifty. The state of health of infants and children was generally good. While there was little evidence of frank vitamin deficiencies at the time of examination, color changes noted in the tongue represent an early B complex deficiency. A basic intake of 2000 calories per person per day for "normal consumers" is believed to be an adequate amount. If it is necessary during the coming period to import food to Germany to maintain such an intake it is believed that wheat would be entirely suitable for this purpose.

Nutritive Failure. Two cases of nutritive failure are cited: In one the pellagra was corrected by niacin but the anemia grew steadily worse until partially corrected by reticulogen, but the patient did not fully regain his strength until given casein hydrolysate. Six children whose diets had been grossly inadequate most of their lives developed chronic cheilosis which disappeared with the administration of riboflavin. The cheilosis recurred and failed to respond until casein hydrolysate was administered in addition to the riboflavin.

AMERICAN RESTAURANT MAGAZINE

Vol. 30, January 1946

* What's in season. G. L. Wenzel.—p. 29.
* Orderly serving stations.—p. 64.
Will electronics revolutionize restaurant cooking. A. Macfarlane.—p. 92.

Vol. 30, February 1946

How to buy meat. J. A. Cline.—p. 24.

What's in Season. In this new series of buying charts on fresh fruits and vegetables, the product is listed first, followed by the type of pack, the unit purchased, the number of portions, the size of the portion, a price range of the particular item, and comment as to supply.

Orderly Service. It is very essential to teach a new employee the importance of keeping his or her station clean. Table appointments should be clean; crumbs should be dusted from chair seats; the floor should be kept clean; spilled foods should be wiped up immediately; the drawers of the serving stand should be closed and the stand should be orderly. It is also important to have a definite place for each piece of equipment used in service, and to have each station kept up to par stock. Borrowing from station to station should be prohibited.

FOOD INDUSTRIES

Vol. 18, March 1946

* Food crisis—nothing new. L. V. Burton.—p. 69.
* Some recent developments in human feeding. J. Drummond.—p. 71.
* Food plant sanitation is not just a chore. M. E. Parker.—p. 76.
* Trichinae killed by 120-deg. F. dehydration. L. A. Spindler, C. F. Dunker and O. G. Hankins.—p. 86.
* New packages and products.—p. 112.

The Food Crisis. America is not, nor has it ever been, the limitless source of food that some, both here and abroad, have fondly imagined. However, the fact that the United States is to share with other nations should not be disquieting to anyone. A legitimate cause for concern is the cosmic forces that cause droughts. There is no reason to

Requires no sugar —and practically no work!

3 EASY JELL-O BEAUTIES:

A green-and-gold parfait of Lime Jell-O flakes and orange slices. A dish of brilliant Cherry Jell-O with snowy whipped cream. A tart of Orange Jell-O topped with one ripe, red strawberry.

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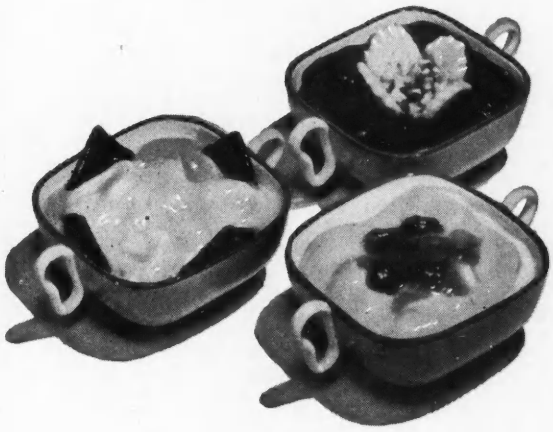

WHAT'S THE NEWS ABOUT JELL-O PUDDINGS?

They're the top favorites—because they taste like grandma's, only more so! Jell-O Chocolate has the real old-fashioned chocolaty taste—Jell-O Butterscotch is rich and "brown-sugary"—Jell-O Vanilla Pudding is made with *real* vanilla. *No sugar needed*—and each portion costs only about two cents, including the milk.

3 EASY PUDDING SURPRISES:

Chocolate cookies on cream-smooth Butterscotch. Banana slices and nuts on Chocolate. Rich red strawberry jam on Vanilla. (Jell-O Vanilla Pudding also makes a delicious Vanilla Sauce for fresh fruits. Simply increase milk by one half.)

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expect that the Northern Hemisphere should be exempt from droughts when the southern half is so afflicted. While a resumption of rationing, or mere shortages of certain foods, may be annoying, a real cause for trouble would come only if there should be a major crop disaster in the Northern Hemisphere during the coming season. The immediate outlook suggests a food crisis different from any within memory, one involving a shortage of carbohydrates. While it is too soon to see the detailed future clearly, the general trend of events should be apparent to all. Barring adverse weather in North America, the crisis can be met successfully.

Developments in Human Feeding. This is a fine presentation of the devices used by Great Britain to supply an adequate diet during the war and the manner in which the people in occupied France, Belgium and Holland managed to survive; also the results of Britain's food program and of the relief feeding on the continent, by Sir Jack Drummond, Scientific Adviser of the British Ministry of Food. Sir Jack states that: "There is, I believe, strong evidence, from those mass experiments in nutrition confirming the observations of F. B. Benedict and his colleagues, made 25 years ago, that at reduced calorie intakes the adult body, after losing a certain amount of weight, adjusts itself to a lower metabolic level. The data from the countries that were occupied by Germany suggest that adjustment occurred, among the town populations, where they had lost 15 to 20% of their original body weight and that at this reduced weight they could get along fairly well on daily intakes of 1600 to 2000 calories. There is one deep and vital impression to be gained from reviewing the European experiences during these hard years. It is that the people of these lands have realized, in the lean times they have been through, that national nutrition needs a plan. People in Great Britain do not intend to lose the ground gained during the war. The government has already taken many important steps in the direction of making permanent the special measures introduced as part of the wartime nutritional plan. And, I believe, Holland and Norway, France and Belgium wil each move in somewhat the same directions. If this movement develops and gathers strength in Europe, as I believe it will, the world will have derived at least one great and lasting benefit from the terrible years through which it has recently passed."

Sanitation. This first of two instalments discusses pest elimination and control from every angle.

Trichinae. Tests of the effect of dehydration on the viability of trichinae in pork show that the parasite survives low temperatures but is killed by dehydrating at 120°F. or above.

New Products. Frozen French-fried potatoes, made by the Maxson Food Systems, Queens Village, N. Y., have been precooked to a point where 20 min. in a 400°F. oven will thaw them and heat them ready for the table. The only ingredient to be added is salt. Frozen raw potato pancake batter, manufactured by Louis Milani Foods, Chicago, includes raw potatoes, salt, onion powder and benzoate of soda. Directions are to thaw, add flour and fry. Super Chef, New York, has placed on the market onion slices with the water removed. The onions are peeled and, when reconstituted, are said to give the appearance of freshly cut rings. For soups and stews, no soaking is necessary. Unused portions, if kept tightly sealed, will retain original quality indefinitely without refrigeration.

FORECAST

March 1946

* Correlation of home economics classes and the hot lunch program. V. Payson.—p. 22.

Home Economics Classes and the Hot Lunch Program. Planning, preparing and serving of the school lunch can be definitely related to units and sub-units in the home economics curriculum. In schools where the lunch program is carried on without outside paid help, the work should be correlated with all home economics courses. Following the outline suggested in the New Hampshire program of studies, specific suggestions are made for definite correlation with various units in the four courses outlined for grades 9 through 12. Similar correlation to a lesser degree is possible with the program for grades 7 and 8 as outlined in the same bulletin.

HOTEL MONTHLY

February 1946

* How to get more profits from turkeys.—p. 58.

Turkeys. What to do with the so-called by-products that accumulate when turkeys are used in quantity. Recipes are given for liver paste, liver sauté in sherry, gizzard paste for hors d'oeuvre, braised necks, boiled necks, boneless wings. Other possible dishes and combinations are listed. The fat and cracklings can be used for shortening in biscuits, muffins, buns, rolls, scones, oatmeal cakes, popovers, griddle cakes and waffles. Two novel methods of using turkey meat are given, "fried turkey mush Tennessee" and "western turkey waffles."

JOURNAL OF HOME ECONOMICS

Vol. 38, March 1946

Taking stock of ourselves. E. Chase.—p. 129.
* If you're shopping for home equipment. A symposium.—p. 137.
* Department store employees' cafeteria. T. Libershal.—p. 154.
* OES eleventh annual survey. G. Adams.—p. 159.

Shopping for Home Equipment. A symposium prepared by experts in the field.

Employees' Cafeteria. The cafeteria supervisor is an "untrained" person who has come up through the ranks. She plans the cafeteria menu, and orders the amount of food she wishes prepared in the central kitchen and in the bakery on the morning before the food is to be served. She also orders foods such as butter, milk, and staple supplies.

Experiment Station Publications. Publications issued by state experiment stations during the past year are listed under headings of food selection and preparation, food preservation, nutritive value of foods, food habits and nutrition problems, family economics, home management, housing and household equipment. It is stated that further information on the work of the agricultural experiment stations is given in the mimeographed compilation *Research in Foods, Human Nutrition and Home Economics at the Land-Grant Institutions, 1945–46*, obtainable from the Office of Experiment Stations, USDA, Washington 25.

PERSONNEL JOURNAL

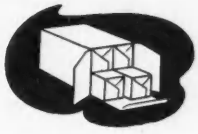
Vol. 24, February 1946

* Warm or cold management. R. D. Loken.—p. 308.
* Counseling methods for personnel workers. A. Garrett.—p. 318.

Personnel Management. A successful organization is dependent on a perfectly planned and controlled schedule that is carried out by people who know how to supervise and practice the correct relationship between job management and man management. Management has learned that the needs of an individual must be considered if a worker is to remain satisfied. This ultimately means better production. The modern supervisor leads his men and does not drive them. The supervisor is an instructor who builds and develops his workers, must honestly be interested in the welfare of his men, knows effective teaching techniques, and uses them tactfully to maintain the respect of his workers.

Butter is Precious

KEEP IT IN THE CARTON



Most American families are getting much less butter than they want. This means that less butter is being used for cooking and baking, more is being saved for table use only.

Butter served on the table must now stand up under new, critical appraisal. Having taken on "scarcity" value, it is being looked to for the utmost in enjoyment. That is why, as shortages continue, consumers will take whatever butter they can get, but even more than ever the presence or absence of quality and flavor will be noticed and remembered.

It is to assure finest quality on the table that most butter manufacturers package their best butter in paraffined cartons. The paraffined carton protects the butter flavor and quality in transit, in the store, and in the home refrigerator.

Butter should always be put back in the paraffined carton before it is returned to the refrigerator. This is particularly important now that butter must be made to last longer . . . yet kept at peak deliciousness and free of icebox odors.

Why the Best Butter is Packaged in Paraffined Cartons—

1. Preserves quality and flavor.
2. Keeps out undesirable odors.
3. Protects perishable body and texture.
4. Gives better sanitary protection and prevents crushing.
5. Reduces moisture loss.
6. Convenience in handling
7. Guards against rancidity.
8. Provides brand identification and assurance of quality.

Paraffined Cartons are also used in packaging Ice Cream, Margarine, Lard, Shortening, and Frozen Foods

PARAFFINED CARTON RESEARCH COUNCIL
111 West Washington Street • Chicago 2, Illinois

THE BEST BUTTER IS PACKAGED IN *Paraffined* CARTONS

Counseling Methods. It is debatable whether or not employee counseling is a proper function of management. During the war it was found to be effective, but it is not recommended except in emergency situations.

RESTAURANT MANAGEMENT

Vol. 58, January 1946

* Why restaurateurs soon must put their peacetime houses in order. E. L. Bernays.—p. 21.
* Basic principles of quantity cookery. A. Easton.—p. 26.
* How a state and its cities cooperated to teach better restaurant sanitation. T. Flynn.—p. 36.

Vol. 58, February 1946

* Basic principles of quantity cookery. A. Easton.—p. 34.

Peacetime Restaurants. During the war, many restaurants took advantage of the situation and reaped high profits, while rendering very poor service to the public. Now that the war is over, the restaurants have a reconstruction job to do as far as food service and courtesy are concerned. Patrons again are demanding the service that was given before the war. Discourtesy was the leading complaint by restaurateurs and public leaders surveyed. Restaurant men say the public was misinformed about rationing of food in restaurants; yet many restaurants took advantage of the shortage of food and served meat substitutes on which they could make a greater profit. With the return of domestic help and modern equipment and frozen food in homes, there will be a decline in the number of people eating out. Restaurants will have to regain good will.

Cooking Sauces. If a very thin layer of melted fat or cream is put over the top of a sauce, it will prevent a scum from forming. All sauces should be cooked in a double boiler, steam table, or steam-jacketed pot. Milk solids will not cling to the sides of the utensil if it is greased before milk is added. Sauces can be divided into three groups from which many variations may be made: white sauce, brown sauce, and drawn butter sauce.

Restaurant Sanitation. In Georgia, a food handler's school was attended by restaurant and hotel owners, managers, supervisors, and employees. The objectives were to protect the health of the food handler, the community, and the state. The students were first impressed with the importance of personal cleanliness. Instruction in the elimination of insects and pests was given. Refrigeration, correct storage methods for food, and garbage handling and disposal were covered. The course usually consisted of five meetings of 1½ hr. each. The Atlanta Restaurant Association designed a badge for each qualified food handler to wear and pictures of employees wearing these badges were published in the newspapers. Waiters, bus boys, and waitresses have realized they are behind the times if they don't have a badge to wear, and those in the kitchens are just as proud of their enamel pins. All training is given without cost to the restaurant owners. Since 1944, over 3000 men and women in Atlanta alone have received their certificates for completing the course.

Quantity Cookery. The second of a series of articles on quantity cookery. This month's article is on soups.

WHAT'S NEW IN HOME ECONOMICS

Vol. 10, February 1946

* Pointers on pastry.—p. 50.
* Know what you are using. L. Sherwood.—p. 65.
* What it means "to screen a film." F. S. Montgomery.—p. 66.
Butter making. H. A. Ruehe.—p. 128.
* Torrington, Wyoming, shares plan for school lunch kitchen. A. Campbell.—p. 138.
* Here, there and everywhere. W. S. Pendergast.—p. 140.
Luncheon dishes.—p. 141.

Pastry Making. Considers the various methods of mixing pastry and evaluates their possible use in foods classes in the light of the students' skill or experience. A score sheet for pastry samples is included.

Selecting Films. The sound motion picture, if it is a good unit, must have a very definite approach to the subject matter being portrayed. It must not deviate from a central thought or idea. It cannot take the necessary time to present many illustrations, the better to convey the idea being taught. Because of these and other factors, it has been proved by experience that a supplemental silent filmstrip should be used in conjunction with a training motion picture. The filmstrip should contain still pictures taken from, or high lighting the sound motion picture unit. Upon these still pictures can be superimposed questions or statements which will promote discussion. The supplemental filmstrip also affords an opportunity for recapitulation of important factors in the film.

"Screening" Films. The key to success and the most important element in audio-visual instruction is the training of teachers to use available aids. The next most important element is proper evaluation and selection of aids for use in the teaching situation. All films should be "screened" as a part of preparation for classroom presentation. As the teacher observes the picture, one question should be constantly in mind. "Is that correct?" An affirmative answer implies the absence of propaganda, no false or exaggerated statements by an advertiser when commercial or industrial films are used. Further, it means a close scrutiny of the facts stated in the commentary or implied by the action or settings. Accuracy of statistics, costumes and interpretation should all be checked by the teacher while preparing a film lesson. Other questions to be considered are: Does the film make judicious use of the mechanics of presentation? Are lesson plans available? Is the film of proper length? Should it be in black and white or in color? Is it on a suitable level? Is the emphasis of the film on education or entertainment? Should the film be sound or silent? A manual for the home economist should be prepared to cover the teaching material in the sound motion picture—perhaps even including the entire script, and incorporating pictures from the filmstrip. In addition, other source information may be included for study and reference, as well as questions on the picture and filmstrip.

School Lunchroom Plan. Floor and wall plans and pictures of a lunchroom kitchen in a small school.

Here, There, and Everywhere. "The best way to ensure greater use of abundant foods in school lunch programs would be to encourage more lunch programs—not to hurl more cabbages and potatoes at the programs now in operation. One good way to ensure more lunch programs would be to pass permanent legislation so that communities afraid to start a school lunch would know what they could count on. If the supervision of the program were adequately integrated with the state departments of education, further expansion would result. If we must have emergency direct distribution, let us have a modification of the food stamp plan. Let the surplus foods be picked up, stored and handled by our regular vendors and let us pay them for their costs of distribution. We would be encouraged to buy these foods because they would be cheap. The vendors would be losing less than under direct distribution as now administered and we would not be swamped with storage difficulties."

THE VALUE OF KNOX GELATINE IN PEPTIC ULCER MANAGEMENT

Many physicians are finding Knox Gelatine a practical aid in the frequent between-meal feedings that are so often desirable in the management of peptic ulcer.

Given at hourly intervals, Knox Gelatine provides a satisfactory control of the gastric secretions and brings relief from the painful symptoms.

Also, many physicians regularly prescribe the *Special Ulcer Diet* described in the Knox booklet, "Peptic Ulcer Dietary." This is a complete diet... bland, and liberal in calories and protein. We will be happy to send you as many copies as you wish.

For the free *Peptic Ulcer Dietary*... and any of the other dietaries listed here... address your request to Knox Gelatine, Box 466, Johnstown, N. Y.

FREE!

Peptic Ulcer Dietary — **Diabetic Diets**
Knox Gelatine Drink — **Infant Feeding**
Feeding Sick Patients — **Reducing Diets and Recipes**
Protein Value of Plain, Unflavored Gelatine

KNOX GELATINE U. S. P.

PLAIN, UNFLAVORED GELATINE...ALL PROTEIN, NO SUGAR

Knox Products Keep Pace Through Laboratory and Clinical Research

News Notes

Mrs. West Appointed to Famine Emergency Council. Mrs. Bessie Brooks West, President of the American Dietetic Association, in response to a telegram from President Truman, has accepted an appointment to the National Famine Emergency Council. In a subsequent letter, Chester C. Davis, chairman of the Famine Emergency committee, asks for suggestions, comment and criticism of the program as it develops, and that steps be taken by the American Dietetic Association so that "the famine emergency story is carried to the public as fully and as speedily as possible."

Ina Lindman Receives Distinguished Service Award. Ina Lindman, director, Home Economics Department, Fruit Dispatch Company, New York, received the Civilian Distinguished Service Award, April 5, in New York, for work as Food Consultant to the U. S. Navy during the war. Admiral Monroe Kelly, Commandant for the Third Naval District, conferred the award. It is understood that the award was made chiefly because of Miss Lindman's work on the *Navy Cook Book*.

Levelle Wood, member of the Institutional Administration staff of Kansas State College, who has recently returned from overseas service, has accepted a temporary position in the Chicago office of the A. D. A. as assistant to the Executive Secretary.

W. J. C. C. Honors Mrs. Roosevelt. A gathering which taxed the capacity of the Mayflower Hotel's Grand Ballroom assembled at dinner in Washington on March 14 to honor Mrs. Roosevelt, United States Delegate to the General Assembly of the United Nations. The affair was sponsored by the Women's Joint Congressional Committee of Washington, D. C., of which Mrs. Jennie Barton Nichols is secretary. Mrs. Nichols, who is also chairman of the A. D. A. Legislative Committee, was a member of the dinner committee responsible for the success of the event. Mrs. Huddleson, editor of this JOURNAL, represented the A. D. A. at the dinner.

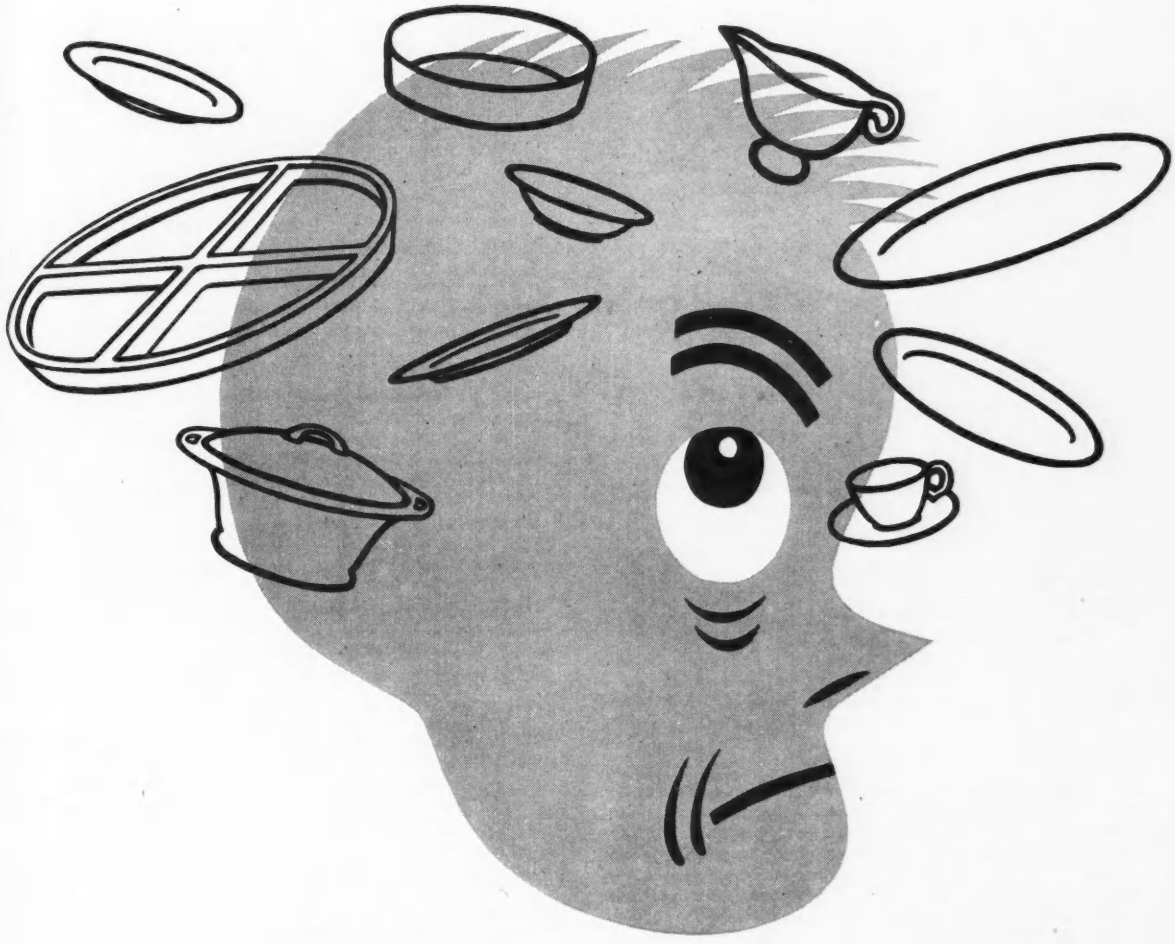
Seated at the speakers' table were the presidents of several of the national women's organizations, including Mrs. Nichols in her official capacity as secretary of the W. J. C. C., Clinton B. Anderson, Secretary of Agriculture, Mrs. Woodrow Wilson, Lt. General Vandergrift, commanding officer of the U. S. Marines, and Dr. Lise Meitner, the atomic bomb scientist. Mrs. Roosevelt was introduced by Senator Tom Connally (also delegate to the General Assembly of the United Nations) and following Mrs. Roosevelt's address, the Secretary of Commerce delivered a tribute to Mrs. Roosevelt. Twenty-two national organizations, whose memberships, it is said, total approximately 10 million, are represented on the W. J. C. C.

School of Health and Hygiene of Mexico (Escuela de Salubridad e Higiene) offers advanced training to doctors, nurses and other qualified persons. A limited number of fellowships is available to foreign students. Admission requirements include a degree or diploma from a recognized institution, and the age limit is 35 years. The courses begin in February and close in December. Further information may be obtained from the Secretaria de la Escuela de Salubridad e Higiene, Plan de San Luis, Colonia P. Elias Calles, Mexico, D. F.

Harvard School of Public Health Publications. The Department of Maternal and Child Health, Harvard School of Public Health, has distributed a list of publications covering the period from late 1940 through 1945. The references include studies conducted jointly with a number of other departments and based only in part on material collected in that department. A few references to unpublished material are also included. A limited supply of the articles listed is available, according to Dr. Harold C. Stuart, Department of Child Hygiene, Harvard University, 55 Shattuck St., Boston.

Fellowships in Health Education. Fellowships for one year of graduate study in health education, effective for the academic year starting in the fall of 1946, leading to a master's degree in public health, are being offered to qualified men and women by the U. S. Public Health Service through funds made available by the National Foundation for Infantile Paralysis. The fellowships provide a year's study in public health education in an accredited school of public health. This training includes an academic year of 8 or 9 months and 3 months of supervised field experience in community health education. The courses include: public health administration, epidemiology, public health and school health education, problems in health education, community organization, and information techniques. A stipend of $100 a month for the entire period of academic and field training, tuition, and travel expenses for field experience will be allowed. Travel expenses to and from the university at the beginning and end of training are not included.

Men and women in sound health, between the ages of 22 and 40, who are citizens of the United States and who meet the entrance requirements of the School of Public Health of their choice are eligible. In addition to a bachelor's degree from a recognized college or university, courses in the biological and/or physical sciences, sociology, and education may be required. Training in public speaking, journalism and psychology, and work experience in a related field are desirable. Application forms may be obtained from the Surgeon General, U. S. Public Health Service, Washington 25. Completed forms, accompanied by two recent photographs, and official transcript of college credits, and a 500-word statement of the applicant's reasons for entering the field of health education, must be in the hands of the Surgeon General by June 1, 1946. Only complete applications will be considered. Veterans with necessary qualifications are encouraged to apply for fellowships. The subsistence allowance for veterans granted under the G. I. Bill of Rights will be supplemented by fellowship funds to bring the stipend to $100 a month. Candidates must maintain a scholastic average of "B" to retain their fellowship.



DISHES ON YOUR MIND?

No matter what your dishwashing problem may be—whether you wash by hand or by machine, in hard water or soft—there's a Wyandotte Product especially made to suit your needs.

Wyandotte Keego* is for washing by machine. However hard the water, it removes soil quickly and thoroughly. Then it rinses freely, leaving no trace of streak or stain.

Wyandotte H.D.C.* is the all-around cleaner for dishwashing by hand. Sudsy and containing soap, it does efficient work in water of any degree of hardness.

Wyandotte Neosuds* is the sudsy but soapless cleaner for washing glassware. It works well in either hard or soft water —and no toweling is necessary.

For cleaning tarnished silverware, there's nothing like Wyandotte G.L.X.*

And for a germicidal rinse, after washing, use Wyandotte Steri-Chlor*—a dependable aid to sanitation. Steri-Chlor is also approved for the rinsing of fresh fruits and vegetables eaten raw.

Your Wyandotte Representative will be glad to advise you on your dishwashing problems and help you pick the right product for your particular job. Call him today.

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Wyandotte, Michigan • *Service Representatives in 88 Cities*

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REG. U. S. PAT. OFF.

Refresher Course for Dietitians. A 6-week refresher course for dietitians whose training and experience are satisfactory to the instructors will be offered July 8 to August 16 in connection with Teachers College, Columbia University. Staff dietitians at Presbyterian and Montefiore Hospitals will conduct the greater part of the work, under the supervision of Nelda Ross and Lenna F. Cooper, but at least a week will be devoted to government and private hospitals in the metropolitan area.

The course is to cover observation and experience in the management of hospital food services. At Presbyterian Hospital emphasis will be placed upon food service to patients; the food clinic; the educational program for student nurses, student dietitians, and medical students; and formula room procedures. At Montefiore Hospital, instruction will be offered in menu planning; ordering; food preparation; food cost accounting; personnel management; and diet therapy as applied to a variety of chronic conditions.

Students register for Institution Management s151 which covers classes, conferences, and clinics in each hospital, and for Institution Management s207G. Institution Management s151 carries 2 points and s207G, 4 points of credit toward the master's degree at Columbia University. Fees, including registration, amount to $82. Meals may be purchased at the hospitals. A limited number of rooms is available at Bard Hall, the residence hall for medical students. Application for rooms should be sent promptly to James Cunningham, 50 Haven Ave., New York.

Students are expected to bring white uniforms. White walking shoes with rubber heels and white hose are preferred. It is urged that application for the course be made before May 15 to Dr. Mary deGarmo Bryan, Teachers College, Columbia University, New York.

Annual Mead Johnson and Borden Awards. The American Institute of Nutrition announces that the Mead Johnson and Company Prize for 1945 has been awarded to Dr. Irwin C. Gunsalus, associate professor of bacteriology, Cornell University, and Dr. Esmond E. Snell, associate professor of biochemistry, University of Wisconsin, for their discoveries and investigations in the field of the B complex vitamins with special reference to pyridoxal and pyridoxamine.

Announcement is also made by the American Institute of Nutrition of the granting of the Borden Award in nutrition to Dr. Philip C. Jeans, professor of pediatrics, College of Medicine, State University of Iowa, and Dr. Genevieve Stearns, research professor of pediatrics in the same institution, for their valuable contributions on the nutritive significance of milk and various components of milk in the maintenance of infant and child health.

National Association of Veterans of the Hospital Corps, with headquarters at 1705 M Street N.W., Washington, D. C., has appealed to ex-Navy and Coast Guard and Army medical veterans to register for free service in finding jobs in laboratories, hospitals or institutions as aides, technicians, nurses, doctors, dietitians and orderlies. Ruth Kirkland is chief clerk of the association, according to the *Journal* of the American Medical Association, March 9.

Expansion in Consumer Service Departments Predicted. Marie Sellers, director of Consumer Service, General Foods, Inc., speaking before the New York Section of the American Institute of Food Technologists, February 21, forecast a great expansion of consumer service departments in utility companies, provided that trained personnel can be obtained. In the 21 years since the establishment of a consumer service department at General Foods, Miss Sellers stated, this department has grown until it now includes 65 people, 26 of whom are home economists. Some 20,000 letters are handled yearly in the department.

Conferences on Industrial Medical Relations. Included in a series of addresses on the general subject of "Advanced Procedures in Industrial Employment" conducted by Wayne University School of Occupational Health, Detroit, January 9 to April 3, were two talks on "The Relation of Nutrition to Industrial Employment" by Mrs. Wintress Dalbey Murray, Eastman Kodak Company, Rochester, N. Y., and Mrs. Quindara Oliver Dodge, chairman, Committee on Industrial Nutrition of the Massachusetts State Committee on Public Safety, and associate professor of institutional management, School of Home Economics, Simmons College.

Sanitary Requirements for School Lunches. The Joint Committee on Health Problems in Education of the National Education Association and the American Medical Association has recently published a statement describing the sanitary requirements for school lunches, entitled *The ABC's of School Lunch Sanitation.* Copies may be obtained from the chairman of the committee, Dr. Thurman B. Rice, State Board of Health, Indianapolis 7, according to the March *American Journal of Public Health.*

Drinking Water Standards. The March 15 issue of *Public Health Reports,* purchasable from the Superintendent of Documents, Washington 25, at 10 cents, is devoted to public health service drinking water standards, 1946.

Forsyth Dental Infirmary. The thirty-first annual report of the Forsyth Dental Infirmary, of which Elisabeth Whipple is chief of the Nutrition Department, states that this department has devoted particular effort to giving practical help with the perplexing nutrition problems of the war and postwar periods. Emphasis has been placed on the preparation and wider use of visual materials including educational exhibits for the benefit of the students and the children and mothers attending the clinic. For the Spanish speaking interns, certain special activities were included in the educational program, such as nutrition charts and pamphlets in Spanish. Throughout 1945 the personnel of the Nutrition Department has actively participated in many of the public health nutrition activities in Greater Boston.

Food Cost and Expenditures. A chart in the March *Marketing and Transportation Situation,* published by USDA, shows that for the year 1945 the average total expenditure per capita for consumer goods and services was $787, of which $252 was spent for food, or 22% of the total income. For the prewar period 1935–39, the figures were $456, $118, and 23% respectively.

Price Control of Domestic Stoves. A 5% reconversion increase factor to be applied to manufacturers' present ceiling prices for domestic cooking and heating stoves, except electric models, was announced March 15 by OPA. Wholesalers are required to absorb 25% and retailers 75% of this manufacturers' price increase. No change will be made by this action in the recently announced dollar-and-cent retail ceiling prices for new gas and electric cooking stoves. All other types of domestic stoves—coal, wood, oil, gasoline, kerosene—will continue to sell in retail stores at the 1942 levels. To encourage the production of lower priced models, each manufacturer is required, as a condition of his receiving the industry increase, to allocate the same proportion of his production to the lower priced models as in 1940–41.

Colorful Special Diet Dishes that Patients Enjoy

One trouble with a Special Diet in Ulcer and other Gastro-Intestinal cases has been the patient's distaste for its monotony. Another difficulty lies in the danger of breaking away from the prescribed diet and having a relapse.

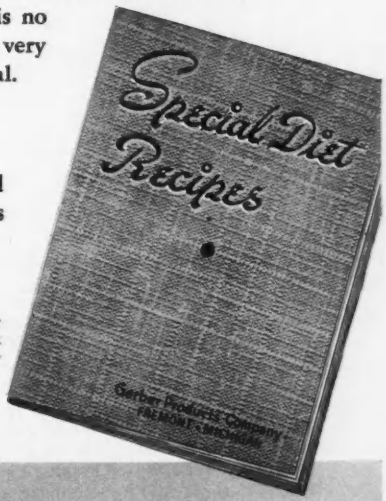
This free booklet "Special Diet Recipes," based on the use of Gerber's Cereals and Gerber's Strained Foods, takes monotony out of Special Diets. Here are 51 pre-tested recipes, with plenty of variety and color, all easy to digest—made to appeal to the appetites of patients on a restricted diet.

Iron and Thiamine Deficiencies

The dishes based on the use of Gerber's Cereal Food and Gerber's Strained Oatmeal are recommended particularly where there is a need for increased iron and thiamine in the diet. Both cereals are rich in added thiamine and other B-Group vitamins (derived from natural sources) and have also generous amounts of added iron. There is no danger of any irritation from the use of these cereals as they are very *low in crude fibre;* actually safe for use by infants as a starting cereal.

A Variety of Special Dishes

Other recipes in the booklet are based on the use of Gerber's Strained Foods, famous for their smooth, uniform texture. Among the recipes included are Soups, Salads, Souffles, Luncheon Diets and Desserts.



Free for the asking. Send for your copy of Special Diet Recipe Book today. Write Gerber Products Company, Dept. 235-6, Fremont, Mich.

Gerber's

CEREALS • STRAINED FOODS • CHOPPED FOODS

Family Spending and Prosperity is the name of a booklet compiled by Dr. Dorothy Dickins and distributed by the American Home Economics Association, 620 Mills Building, Washington 6. Single copies are 10 cents each; 100 or more, 5 cents each.

Wheat. USDA reports that more U. S. ground will be planted to wheat this year in this country than in any year since 1938, according to the latest crop estimates. Plantings of spring wheat are 1.6% more than last year. Total plantings of all wheat—winter and spring—for 1946 harvest are expected to amount to an increase of 3% over last year.

Spring plantings, added to the winter wheat sown last fall, point to a billion bushel crop for the third year in a row. Last year's production of 1,123,000 bushels was the largest on record so far and is now being shared over the world in the war against famine. Fully 36%—a total of around 400,000,000 bushels—of the 1945 record wheat crop has been sent, or is scheduled for shipment abroad.

Use Potatoes to Speed Wheat Shipments. "Reach for a potato instead of more bread" is a slogan suggested by the BHNHE for Americans who are looking for ways in which to help save wheat so that it may go to starving people abroad. U. S. potato supplies are currently bountiful, and, while sizable quantities are being sent abroad, particularly to Belgium and France, such shipments are limited because potatoes are both bulky and perishable. As some of the ways in which potatoes can be used specifically in place of bread, home economists of the bureau suggest: "At breakfast, potatoes can replace wheat cereal, toast, or biscuits some mornings. If every minute counts, sliced potatoes can be fried country-style, using a very small amount of meat drippings to help them brown nicely. Or, potato cakes can be made from leftover mashed potatoes. Or hashed browned or creamed potatoes can be quickly prepared from boiled potato leftovers. Letting potato salad take the place of a sandwich is one way to use less bread at lunch or supper time. Potatoes can replace bread in stuffings, and can make a fluffy topping for meat pies and some other baked dishes instead of top crust." The leaflet, *Potatoes in Popular Ways*, prepared by the bureau, details many ways of cooking potatoes to conserve food value and includes recipes. It is available free from USDA, Washington 25.

Consignment Selling of Bread. War Food Order 1 which prohibits the consignment selling of bread and other bakery products, is playing a key role in the current campaign to provide more wheat for Europe, USDA has warned. In view of the urgent need to eliminate waste of food, all wilful violators of the order will be vigorously prosecuted. Bakers, grocers and other distributors of bakery products are asked to report promptly to the nearest compliance field office of the department any violations coming to their attention (offices are located at Atlanta, Chicago, Dallas, New York, and San Francisco).

Food Production in Famine Countries. Vigorous measures being taken by the people of war-torn countries to produce food for themselves are described in a brief report issued by the Office of Foreign Agricultural Relations, USDA, for the information of the President's Famine Emergency Committee, government agencies, and others cooperating in the nationwide drive to conserve food. According to the report, the people of the world's countries where the specter of hunger has assumed the most tragic proportions are fighting a valiant food production battle against enormous handicaps. Displaying their belief that help comes to those who help themselves, they are working desperately to grow as much to eat as possible from every square foot of available ground. In Europe, the farmers are trying to grow more food this year than they were able to grow last year, when yields were pitifully small in war-torn, drought-stricken areas. But city people in areas where food deficiency is greatest aren't leaving it entirely to the farmers. They, too, are working, in some cases cooperatively with the farmers.

Some, able to acquire the use of little plots of ground outside of cities and towns, intend to grow gardens this year as they did last. The urgent need for persons who normally are not farm workers to pitch in and help produce food in European deficit areas has resulted in many employees being permitted to leave their offices and places of business as early as 1 o'clock in the afternoon to enable them to work on farms and collective gardening projects the rest of the day. Heads of families, working in offices or in some other non-farm capacity, normally do not receive nearly enough salary to buy food—even if it were available—at prevailing inflation prices. Because of shortage of draft power and equipment, it has become the practice in many areas for farmers to pool or share horses, oxen, and even a hoe or a plow. European farmers will also be hampered in 1946 by lack of transportation facilities, scarcity of fertilizer, and insufficiency of feed grains for livestock and poultry.

In the deficit areas of the Far East, food production is primarily a matter of individual self-preservation and many handicaps resulting from unfavorable weather or the ravages of the war continue to prevail. In India, there can be little food production activity until the seasonal rains begin in June. Then everyone able to do so will strive to stave off threatened famine by helping to grow grain and other foods. Now, as in the past, there's little fertile idle land in China. The same is true of other Far Eastern areas.

Emergency Food Program Director. Secretary of Agriculture Clinton P. Anderson has named Walter F. Straub, Chicago, of the W. F. Straub Company, manufacturers of food products and chemical specialities, as director of the emergency food program, USDA. Mr. Straub will work with and through the regularly established agencies of the department as well as with other federal agencies, with the President's Famine Emergency Committee, and with citizens' groups, conducting activities to stimulate public participation in the conservation of needed foods.

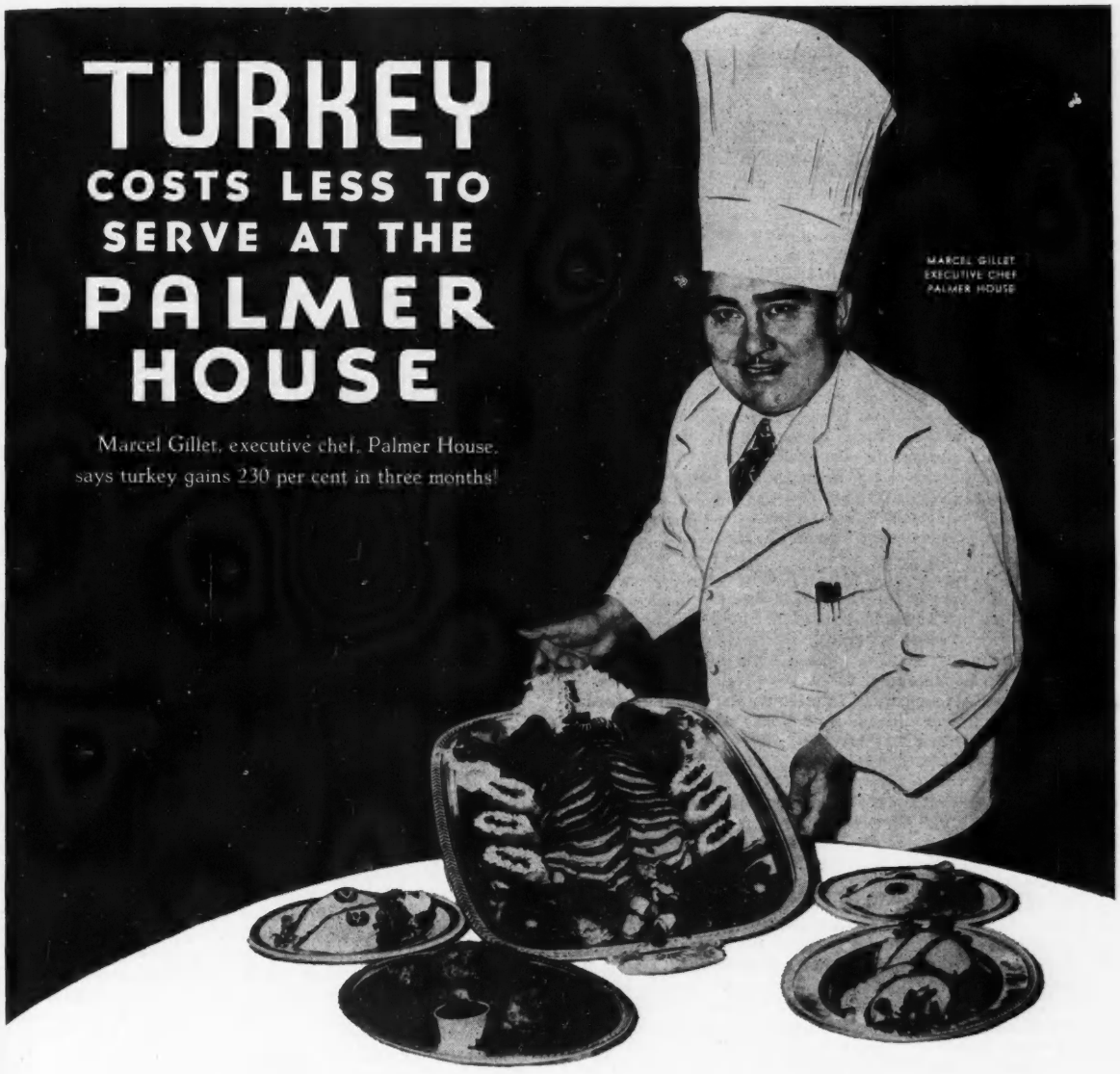
Restaurant and Hotel Management Courses, University of Denver. An institute for hotel and restaurant executives, inaugurated in March at the University of Denver, is the forerunner of a 4-year program in Restaurant Management expected to get under way at that university in September 1946, according to the National Restaurant Association *News Letter*, March 7.

Dehydrated Wines. Designed for use in cooking and as a beverage base, dehydrated wine with the alcohol removed is now being developed, according to *Food Field Reporter*, March 18. The product can be reconstituted with water or alcohol and is said to retain aroma, taste and color of the liquid wine.

Community Nutrition Campaign. The Cereal Institute, Inc., Field Bldg., 135 S. La Salle St., Chicago 3, has published a complete report of the "Bridgeport Better Breakfast Program" conducted in the summer of 1944, for the benefit of other communities who may be considering a similar community program. Andrew Duncan, managing director of the institute, writes that informational help to community leaders in other cities is available from the director of the Community Nutrition Center, 925 Main St., Bridgeport, Conn.

TURKEY COSTS LESS TO SERVE AT THE PALMER HOUSE

Marcel Gillet, executive chef, Palmer House, says turkey gains 230 per cent in three months!



At the world-famous Palmer House, in Chicago, and also at many another well-run hotel or restaurant, they know their meat costs . . . and these costs are favorable to turkey. The comparative net yield of the new meat-type turkey, and the net cost-per-pound of edible meat are convincingly lower. Little wonder the Palmer House uses 230 per cent more turkey today than only three short months ago.

Countless hotels, restaurants, hospitals, clubs and school cafeterias throughout the nation are learning these same facts, and are turning to turkey entrees, salads, sandwiches and other tempting dishes.

Ask for our pamphlet "Turkey Costs Less" and famous turkey recipes by well-known chefs, for institutional users everywhere.

NATIONAL TURKEY FEDERATION
MOUNT MORRIS, ILLINOIS

National Foundation for Infantile Paralysis. Dr. Morton A. Seidenfeld, until recently chief clinical psychologist in the Division of Neuropsychiatry, Surgeon General's Office, U. S. Army, has been appointed director of psychological services for the National Foundation for Infantile Paralysis. In cooperation with the medical director of the National Foundation, Dr. Seidenfeld will inaugurate a research program on the psychological problems and needs of infantile paralysis patients, and will develop a plan for their psychological treatment.

New Films and Other Materials Available. A special restaurant training film on the proper methods of brewing coffee, produced by the National Coffee Association and sponsored by the Pan American Coffee Bureau, 120 Wall St., New York 5, had its premiere showing at the National Restaurant Convention in March. In addition to the film, the bureau is making available check charts of cleaning operations and brewing instructions to be posted near coffee urns.

A film and source book on the Betty Crocker method of cake making is available from the Home Service Department, General Mills, Inc., Minneapolis 15. Standardized quantity cake recipes are also available.

"Cooking Meat by Dry Heat" is a 52-frame slide film in technicolor made available through the National Live Stock and Meat Board, Chicago, and distributed free of charge by the Society for Visual Education, 100 E. Ohio St., Chicago.

"Keep it Frozen" is a 16 mm. film in technicolor which shows the proper procedures used in freezing, packing and storing both raw and cooked foods for holding, obtainable from the Frigidaire Division, General Motors Corporation, Dayton, Ohio.

A 3-reel, Kodachrome, 30-min. movie, with sound, entitled "Good Grooming," available through Castle Films, Inc., 30 Rockefeller Plaza, New York, covers the fundamentals of good health, exercise, diet, posture, make-up and dress, and is of especial value in training waitresses.

For restaurant operators interested in making job analyses, a manual entitled *Training and Reference Manual for Job Analysis*, U. S. Government Printing Office, Washington, priced at 10 cents, is recommended by the National Restaurant Association.

Another film on coffee brewing entitled "The Human Element" has been produced for Standard Brands, Inc. Frank Singiser, radio commentator, narrates the film. Following a description of brewing by the basic urn method, attention is given to the filter method and various types of equipment used. The 22-min. film is now available for showing to groups in the hotel and restaurant industry—at local and national association meetings and at meetings of groups of employees of individual operators. Information regarding the showing of the film at meetings may be obtained from local Chase and Sanborn representatives.

"Dishwashing Dividends" is the title of a new educational moving picture, 16 mm., sound, full color, sponsored by Economics Laboratory, Inc., Guardian Building, St. Paul 1, Minn., manufacturers of Super Soilax for mechanical dishwashing. Photographed in actual dishrooms, the movie follows dishwashing operations from the customer's table to the clean dish table.

A National Soup. Arnold Shircliffe, Chicago School of Cookery, states that "Since the tomato is American through and through, will grow in the North, South, East or West, is in season the year round, is economical and available to the greatest number of people, the greatest number of Americans enjoy it, and last but not least, since it is colorful and contains many, many health-giving properties, the Chicago School of Cookery proposes Cream of Tomato Soup for 'the National American Soup—the Soup of all Americans.'" This statement appears in a booklet published by the Chicago Board of Education and distributed by the National Restaurant Association. It includes also a recipe to yield 1 gallon of cream of tomato soup, developed by August Forster, head instructor, Chicago School of Cookery. Ingredients consist of purée of tomatoes, canned tomatoes, cream (18%), flour, bacon, broth, onions, garlic, celery, carrots, leeks, parsley, peppercorns, bayleaf, cloves, sugar and salt. The March 7 issue of the National Restaurant Association *News Letter* gives another recipe for tomato soup made without cream and developed by Gladys Cooper at Ohio State University. The method is described as "curdle-proof," and ingredients are tomato juice, onion, margarine, flour, salt, sugar, and milk.

Helen S. Mitchell was appointed professor of nutrition, Department of Home Economics, Carnegie Institute of Technology, Pittsburgh, effective January 28.

Capt. Myrtle Aldrich Receives Assignment. According to a release from the Office of the Surgeon General, dated February 28, Capt. Myrtle Aldrich, M.D.D., St. Mooris, Idaho, formerly Personnel Service, Military Personnel Division, Medical Department Dietitian Branch, Office of the Surgeon General, has been assigned to MDRP, Fitzsimons General Hospital, Denver.

Mrs. Marion Moseley Sniffen Appointed Assistant to Melva Bakkie. Mrs. Sniffen, director of American Red Cross Nutrition Service in the Pacific area headquarters, San Francisco, since January 1942, has been named a national assistant director of nutrition at Red Cross headquarters, Washington, D. C. As assistant to Miss Bakkie, the national director, she will aid nutrition services in domestic and insular chapters, including Puerto Rico and the Virgin and Hawaiian Islands. Mrs. Sniffen will serve as liaison with lay organizations, such as parent-teacher organizations, women's clubs, Girl Scouts and church groups, and with the BHNHE. She will also assist Red Cross college units in establishing nutrition activities in universities and colleges throughout the nation. Mrs. Sniffen's appointment in this capacity marks the first time a Red Cross official has been named as a nutrition liaison officer with civic groups. A graduate of Bryn Mawr College, she spent four years in Labrador and northern Newfoundland under the direction of Sir Wilfred T. Grenfell, studying the effects of dietary deficiencies, and organizing a child welfare department. Following study in Vienna and Berlin, she was nutritionist for the foster home department, New York Nursery and Child's Hospital, and in Chicago, of the Elizabeth McCormick Memorial Fund, for which she conducted nutrition classes for children and parents in settlement and schools. Mrs. Sniffen received the master's degree from the University of Chicago and completed one year of additional study at Northwestern Medical School. She is a member of the American Dietetic, the American Home Economics and the Western Farm Economics Associations. Mrs. Anita D. Campbell, formerly assistant director, became acting nutrition director of the Pacific area, comprising California, Washington, Oregon, Nevada, Utah, Arizona, Idaho and Alaska, February 1.

Dr. James R. Wilson, associate professor of pediatrics, Syracuse University School of Medicine, Syracuse, N. Y., has been appointed secretary of the Council on Foods and Nutrition of the American Medical Association. He succeeds Dr. George Anderson, who resigned to specialize in pediatrics in Rochester, N. Y.

Winifred Cannon Accepts New Position. Miss Cannon, formerly with the American Meat Institute, has accepted a

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Elizabeth Rugh Married. Announcement has been received of the marriage of Elizabeth Rugh, formerly dietitian in the Veterans Administration, to Mr. Homer F. Bair. In a recent letter to the JOURNAL, Mrs. Bair, whose address is "Fairview," R. D. 1, Greensburg, Pa., said that she planned to keep in touch with the Pennsylvania Dietetic Association through the Pittsburgh group.

Mrs. Ruth Boyer Streib, Nutrition Editor. Mrs. Streib's name now appears as assistant nutrition editor on the masthead of the *Food Field Reporter*. She is an active member of the A.D.A.

Jean McDougall Page, Director of U. S. Inspected Foods Educational Service. Mrs. Page will conduct the educational program for the U. S. Inspected Foods Educational Service, Inc., 745 Fifth Ave., New York, a national nonprofit association organized by processors of fruits and vegetables who have applied for and been approved to operate under the continuous plant inspection service of USDA and who voluntarily use U. S. grade labels. For the past 6 years Mrs. Page has been food and equipment editor, Research Department, Household Finance Corporation, and prior to 1940 she was home economist for Edison General Electric Appliance Corporation. She has also had experience as a dietitian at Evanston Hospital, Evanston, Ill.

District of Columbia Dietetic Association. The first issue of the association's new quarterly *Bulletin* has appeared, ably edited by Capt. Ruby Winslow, Office of the Surgeon General. Interesting features include a message from the president, Mrs. Doris Sutton, and reports of developments at Walter Reed Hospital, Army Medical Center, and in the Dietetic Service of the Veterans Administration, the Industrial Feeding Division, USDA, and the Nutrition Service, American Red Cross.

The spring conference of the association will be at the Wardman-Park Hotel, May 11.

The Executive Board and members of the American Dietetic Association's Legislative Committee, entertained the editor of the JOURNAL, Mrs. Huddleson, at a luncheon at the Hotel Continental, March 15.

Kansas Dietetic Association. Volume 1, Number 1 of *The Sunflower*, bulletin of the association, appeared in March, under the editorship of Berdena Rosenow, University of Kansas Hospital.

The annual meeting was held March 29 at the Hotel Jayhawk, Kansas City. Speakers included: Dr. Helen Stocken, Menninger Foundation, Topeka; Dr. C. J. Weber, University of Kansas; Dr. Kathryn Stephenson, University of Kansas Hospitals; Ruth Green, dietitian, University of Kansas Hospitals; Reuben E. Corbin, USDA; Mrs. Bessie Brooks West, President, A.D.A.; and Gundren Carlson.

Virginia Monahan, Nutrition Clinic, University of Kansas Hospitals, was married January 12 to Dr. Spencer Bayles, resident in psychiatry and pathology at the same hospital. Mrs. Bayles is speaker on the tour conducted by the state association to recruit high school girls as dietitians throughout the state. More than 32 speeches in 22 towns were scheduled for the months of March and April.

Maryland Dietetic Association. A refresher course in Diet Therapy has been given for members of the association and others, at Red Cross Headquarters, Baltimore. Planned and sponsored by the Diet Therapy Section, Mary Rinehart, and chairman, the Nutrition Department of the Red Cross, Mrs. Alice Lambert in charge, the schedule is as follows: Dr. J. Sheldon Eastland, "Diabetes"; Dr. W. Halsey Barker, "Liver Conditions"; Dr. Caroline B. Thomas, "Hypertension"; Dr. Earnest Gaither, "G. I. Conditions."

Frances Gibson gave a dinner at the Park-Plaza for the Executive Board, at which Mrs. Bernadine Lewis, who has resigned as treasurer of the Maryland Dietetic Association, was guest of honor. Miss Gibson is now director of food service at the Baltimore City Hospital and has recently added to her staff Christine Goeringer, formerly of Flushing Hospital, Flushing, N. Y.

Mary Ely is now on the dietary staff at Union Memorial Hospital. Joyce Western has accepted the position of floor dietitian at University Hospital where she recently completed her student course. Dorothy Doty, graduate of the student course at Cook County Hospital, Chicago, is now therapeutic dietitian at University Hospital.

Imogene Murphy announced her marriage to Dr. Donald Holst on March 30.

Massachusetts Dietetic Association. A food institute entitled "Organization and Management," sponsored by the Massachusetts Dietetic Association and Simmons College, will be held June 6–8 at Simmons College. The institute is planned for all dietitians who are interested in the latest facts on modern management, and will include information about our return to prewar standards, as well as predictions of things to come, according to Marion Floyd, Massachusetts General Hospital. A partial program, announced April 1, included "Problems of Administration"; "Food Cost and Service Control"; "Marketing"; "Maintenance and Sanitation for Food Departments"; "Labor and Management Relations."

Michigan Dietetic Association. The Detroit association is following its custom of holding an open meeting to which members of allied professions are invited, according to Jane Porter, president. At this year's meeting, April 17, Dr. Elliott Beech, assistant director of research, Children's Fund of Michigan, spoke on "The Nutritional Status of Troops in the South Pacific," in which he described his experience with the Food and Sanitation Division of the Medical Corps, U. S. Army.

Dr. Dunning, Wayne University Medical School, addressed the members of the Detroit association at their regular February meeting on "The Importance of Diet in the Treatment of Cancer."

There are now 8 nutrition classes being offered by the American Red Cross in Detroit, with an average attendance of 40 per class.

The course in Quantity Cookery at Wayne University now includes one week at the Meat Cutting School of Kroger Grocery and Baking Co., Detroit. Under the supervision of Jack Cassell, the students learn to cut sides of beef, veal, lamb, and pork, suitable for their menus. Points on food merchandising are given also. With the cooperation of food managers in Detroit, Wayne University Institution Administration students spend some of their laboratory hours at Harper Hospital, the Detroit Athletic Club, Greenfield's Cafeterias, the Women's City Club, the Detroit school lunchrooms, and the Hotel Statler.

Irene Boeltz, dietitian at the West Quadrangle, University of Michigan, addressed members of the Ann Arbor association, February 4, on her experiences in the Army, particularly her work at "Willow Run," the Army mess at Grosvenor House, London. Jane Billyeald and Adele Moehl, recently separated from the Army, are planning to pursue graduate studies this coming semester.

Recent marriages include that of Mary Lou Seeley, January 19, in Owosso, to Mr. Conrad Thompson, 1013 Avalon Blvd., Wilmington, Calif. Norma Griswold, for-

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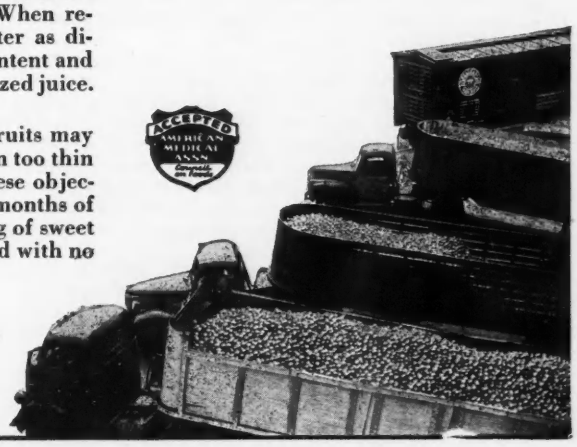

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merly at University of Michigan Hospital, was married to Mr. Richard Roder, February 9, in South Lyons. Mary Ellen Watters has resigned from the Community Hospital and Janet Marvin from Leila Hospital, both of Battle Creek, to be married.

Minnesota Dietetic Association. The May meeting will be held in conjunction with the annual meeting of the Minnesota Hospital Association, St. Paul, May 28.

In March, members of the Twin City association held a dinner meeting on the University of Minnesota campus to honor Dr. Eva Donelson, who, until her recent appointment to the Ohio State University staff, has been a member of the faculty of the university's Home Economics Department. The speaker of the evening was Mary I. Barber, Kellogg Company, who gave a stimulating and amusing account of her observations on the "sometimes unaccountable" eating habits of the men in the Army.

The Rochester association held its March meeting in the Nurses' Home of St. Mary's Hospital. Dr. Miriam E. Lowenberg gave an illustrated talk on her experiences in the organization of the Food Service Department of the Child Service Centers at the Kaiser shipyards in Portland, Oregon. She outlined the program developed in the handling of feeding problems for the various age groups, starting with the 18-month-old child, and explained the Home Food Service plan used there.

Charlotte Ludwig, formerly at Barnes Hospital, St. Louis, joined the dietary staff of St. Mary's Hospital, Rochester, March 1. Miss Ludwig received her bachelor of science and master of science degrees from Purdue University; she interned at the University of Michigan Hospitals.

Nebraska Dietetic Association. E. Lynnette Gatten has accepted a position with the Blackhawk Hotels Company in charge of the food service in their eight hotels.

Leta B. Linch has retired as administrative dietitian, Lincoln General Hospital, and has been succeeded by Myrtle Donahoo. Arlene Luthi, formerly of Harper Hospital, Detroit, succeeds Miss Donahoo as therapeutic dietitian.

Dr. Ruth Leverton addressed the Nebraska Home Economics Association at their annual meeting on "Food Habits and Progress in Nutrition." Dr. Leverton is coauthor with Thelma McMillan of an article which appeared in the *Journal* of the American Medical Association on "Meat in the Diet of Pregnant Women," and with Dr. Floyd Rogers of a new booklet, *Your Diabetes and How to Live With It.*

Clare Winston Osborn, now on the foods and nutrition staff, University of Nebraska, is teaching the course in Diet in Disease. Ruth Mierhenry has succeeded Hortense Allen as business manager, university residence halls, and Lucille Backmeyer, formerly Army Medical Department Dietitian, has joined the dietary staff of the residence halls.

Margaret Bruchert has resigned as dietitian, Immanuel Hospital, Omaha.

Greater New York Dietetic Association. A joint dinner meeting with the Social Welfare and Public Health Departments, the Greater New York Southeastern District Home Economics Association, and the New Jersey Home Economics Association was held March 21 at Hunter College Restaurant. Dr. Norman Jolliffe, chief of Nutrition Clinic, New York City Department of Health, and Dr. Walter Wilkins, director, Nutrition Investigations, Florida State Board of Health, were the speakers.

The theme of the meeting April 11 at St. Vincent's Hospital was "Nutrition Marches On." Speakers were: Dr. Clara Taylor, Teachers College, Columbia University, "Tools for the Teaching of Nutrition"; and Louise Bates Ames, curator, Yale Films, Child Development Clinic, "Child Behavior." Dietitians interested in seeking positions or changing their present positions in the New York area are being referred to Dorothy deHart, Roosevelt Hospital, 428 W. 59 St. Rosters of the membership of the association were sold at 35 cents each at this meeting, of which Dorothea Horstmann was chairman.

New York State Dietetic Association. Plans are under way for the state convention to be held at the Hotel Syracuse, Syracuse, May 13–14.

The fall meeting of the Central New York Dietetic Association was held at the Wherting-Johnson Hospital for Rheumatic Fever Children. Dr. Fred Hiss spoke on the care and diagnosis of children afflicted with rheumatic fever, and of the excellent system in the public and parochial schools for checking patients in the early stages of the disease. The March meeting was held at the Institute of Frozen Foods.

Margaret Mills, formerly of Syracuse General Hospital, has accepted a position as chief dietitian, Highland Hospital, Rochester.

Marion Hill, recently discharged from the Army after 34 months in England with the 52nd Hospital Unit, has taken the position of chief dietitian, Syracuse General Hospital.

Mrs. Beverly Frost Warner has resigned from the Hospital of the Good Shepherd, Syracuse. Aura B. Louhi replaces Mrs. Warner.

The Buffalo association met at Buffalo General Hospital, January 10. Dr. Harold M. Robins, guest speaker, staff member of the Arthritic Service, E. J. Meyer Memorial and General Hospitals, discussed the causes, treatment and prognosis of the various types of arthritis.

The association participated in the Susan B. Anthony Program at the Twentieth Century Club, February 15. The Interclub Council, which is composed of delegates from each women's organization of Buffalo, sponsors this annual dinner. Mary Donlon, chairman of the New York State Workmen's Compensation Board, the guest speaker, spoke on "Peace Can Be What We Make It."

Mrs. Luella Fisher, director of Home Service, Iroquois Gas Company, was hostess to a joint home economics and dietetic dinner meeting, February 18. Elizabeth Sweeney, Home Economics Department, *McCall's Magazine*, spoke on "New Equipment and New Foods."

The March meeting, at the Sisters' Hospital, consisted of an afternoon round-table discussion on pertinent dietary problems, with the following discussion leaders: Sister Marcella, Professional Education Section; Florence Morton, "Ward Food Service and New Equipment"; and Annette Rachman, "Trends in Therapeutic Diets."

Grace Schenk has been discharged from the Army and has resumed her position as staff dietitian, Edward J. Meyer Memorial Hospital.

Ohio Dietetic Association. Mrs. Ethel Austin Martin spoke at a meeting of the Akron Dietetic Association, March 20, on the subject "Current Trends in Nutrition Research." Reviewing the work of Dr. Ancel Keys at the University of Minnesota, she told about the human guinea pigs, who on a low caloric diet and performing hard manual labor reduced their body weight 25%. The men then looked much older than they were, were high strung, quarrelsome, in a bad mental state, and thought of nothing but food. On a 2000-calorie diet with a high percentage of vitamins and minerals, there was some progress but it was very slow. Not until the intake approached the level of 4000 calories was there any striking progress towards rehabilitation. She also reported that Dr. Lydia Roberts at the University of Chicago has proved through an experiment with school children over a year's period of time that by adding more fruit juice, an extra egg a day, more milk, an extra whole

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High lights of the twenty-first annual meeting of the Ohio Dietetic Association, April 26–27, included a talk by Grace E. Smith on "Good Food"; a workshop on methods of constructing test questions for the teaching of nutrition and dietetics to student nurses led by Aileen Merwin, University Hospitals, Cleveland; an address on diabetes mellitus by Dr. Thomas E. Sharkey, Miami University Hospital, Dayton. Mrs. Henry Ebert recounted her personal experiences during the war in a talk entitled "From Concentration Camp to Freedom." At the banquet Friday night, Dr. Helen Hunscher described responsibilities of members to the state and national associations. The climax of the convention program was the presentation of the seven student projects: one from each approved course in the state. This has been a prominent feature of the annual convention for several years and is looked forward to from year to year. A silver tea at the Toledo City Hospital marked the silver anniversary of the state organization.

At a recent meeting of forty-one women's clubs at the Gibson Hotel Roof Garden, Cincinnati, Margaretta Ackerman represented the Cincinnati Dietetic Association in a skit which featured the comparison of living costs following World War I with those of today.

Members of the Cincinnati Dietetic Association have been enjoying *The Dietitian's Digest*, a monthly publication of their Diet Therapy Committee which abstracts interesting and pertinent articles from 55 journals. Mrs. Margery Earley is chairman of the committee; other members are: Ann Turner, Verda Sherrill, Joan Wilhelm, Katherine Floeresh, and Beverly Van Deventer.

Helen Klan, instructor in dietetics, St. Elizabeth's Nursing School, Youngstown, assembled a fine display on nutrition at a recent open house meeting of that institution.

Sister Francis Clare, St. Elizabeth's Hospital, Youngstown, spoke on the subject of "Health and Diet" before the Young Women's Club of the Belmont Avenue Y.W.C.A., Youngstown, in April.

Oklahoma Dietetic Association. The eighth annual convention of the association was held at the Skirvin Hotel, Oklahoma City, April 5–6. The program included: "Selection and Use of Commercial Cooking Equipment," L. John Fretwell, Oklahoma Natural Gas Co.; "Electric Cookery," Russell Bloomberg, Electromaster Co., Detroit; "The Use of Floor Plans in Arranging Equipment," Kathleen Vaughn, Y.W.C.A., Oklahoma City; "A Diet Manual's Value to the Dietitian," Vera Parman, University Hospital, Oklahoma City; "A Diet Manual's Value to the Doctor," Dr. N. Price Eley, Oklahoma City; "How to Build a Diet Manual," Florence H. Smith, Guthrie, formerly head, Department of Nutrition, University of Chicago Clinics, and past-president of A.D.A.; "New Methods in Presenting Nutrition," Vera Grieve, Oklahoma Natural Gas Co.; "Feeding the Airlines," Frank Wedder, Sky Chefs, Inc., New York. A session on opportunities in home economics was conducted which high school and college girls were invited to attend. Hazel Larrick, Enid General Hospital, Patricia Beezley, Anna Maude Cafeteria, Dr. Helen Burton, University of Oklahoma, and Lucille Johnson, Public Service Co., Tulsa, presented the various aspects of home economics opportunities.

Rochester (Minnesota) Dietetic Association. At the February meeting, Dr. Russel M. Wilder, professor of medicine and chief of the Department of Medicine, Mayo Foundation, spoke on "Signs and Symptoms of Vitamin Deficiencies."

Certificates and pins were received by four dietetic interns at a dinner in their honor at St. Mary's Hospital, Rochester, February 19. Those completing the course have received the following appointments: Ruth Franklin, St. Mary's Hospital, Rochester; and Sister Ann Joseph, St. Joseph's Hospital, Lorain, Ohio. Jessie Mosely will return to Auburn, Ala.; Norma Whimmery Haley, to Lafayette, Ind.

Students who entered the hospital training course for dietitians at St. Mary's Hospital, Rochester, February 22 are: Berdean Edwards, University of California, Berkeley; Jean Griebenow, University of Minnesota; Masae Charlotte Iwata, University of Colorado; Carmen Vazquez, Florida State College for Women; Virginia Weilert, St. Mary's College, Holy Cross, Ind.; and Eileen Wiss, Fontbonne College, St. Louis.

St. Louis Dietetic Association. At the January 7 meeting, Virginia Minnich described her recent trip to Havana, Cuba, where she worked with Dr. Tom D. Spies on folic acid in the treatment of tropical sprue. The February program consisted of moving pictures on nutrition, including "Modern Nutrition," by E. R. Squibb and Sons, and "Something You Didn't Eat." In addition, a recent film from the War Department was shown, depicting air combat over Europe.

The feature of the March program was a talk by Wendall Huntington of Ralston-Purina Company on better relations between management and labor.

Margaret McCleur, formerly of Barnes Hospital, is now in charge of the plant cafeteria at Ralston-Purina, replacing Mrs. Tom Costello. Mrs. Anita Abenland has resigned from her position at Maternity Hospital to join her husband, recently returned from overseas. Josephine Flory, former director of the nutrition service of the St. Louis Chapter, American Red Cross, is now working with the Extension Service, USDA, in Columbia, Mo.

Hazel Bradburn, formerly head dietitian at Jewish Hospital, is now in charge of food service at Mary Institute, St. Louis County. Helen Latta succeeds Miss Bradburn at Jewish Hospital. Jeanette Botsford, formerly on Tirrill Metabolism Ward at Barnes Hospital, is now therapeutic dietitian at Jewish Hospital.

Ruth Nesler, formerly with the Army Medical Department, and Edith Simpkins, Medical College of Virginia, have joined the dietary staff of Barnes Hospital.

Announcement has been received of the marriage of Eva Mae Chambers to Dr. Robert Stowell, in December. Dr. and Mrs. Stowell will leave soon for Sweden, where Dr. Stowell will continue his studies in pathology. Betty Bouche, formerly with the Dairy Council, was married in December to Mr. John M. Kincer, temporarily stationed at Daytona Beach, Fla. Helene Knapp, food clinic dietitian at Firmin Desloge Hospital, was married to Mr. Peter J. Kwentus on St. Valentine's Day. Esther Marie Schnaedelbach, formerly dietitian at Roosevelt High School, was married to Mr. Brooks S. Morgan and is living in California. Hester Smith, Pet Milk Company, was married recently to Mr. George Harris.

Texas Dietetic Association. The Executive Board of the state association met at Texas State College for Women, Denton, January 26. Dr. Laura McLaughlin, president, reported that the annual meeting of the state association had been changed from March 8–9 to May 11–12 by vote of the Executive Committee.

Plans have been made to begin publication of the state bulletin which was discontinued during the war. The following were elected members of the bulletin committee: Mamie Ruth Harris, Orange; Mary E. Smith, Austin; and Tony Bratcher.

Dorothy Dahnke, formerly a member of the Dallas Dietetic Association, has been recently appointed home economist for the Texas Power and Light Company. Other

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A Nutrition Bibliography

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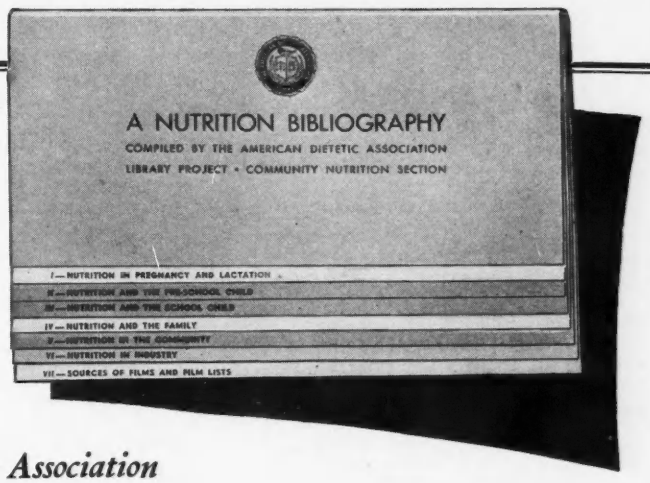
A NUTRITION BIBLIOGRAPHY
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Section I—Nutrition in Pregnancy and Lactation
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THE AMERICAN DIETETIC ASSOCIATION
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recent appointments include: Emilie Brutinel, formerly regular relief dietitian at Baylor Hospital, to Mt. Sinai Hospital, Cleveland, as assistant therapeutic dietitian; Pauline Butler, formerly with the Anna Maude Cafeteria, Oklahoma City, to North Texas State Teachers College, Denton, as assistant dietitian; Frances Mangold, formerly head dietitian at the City-County Hospital, Fort Worth, to Rouse, Patterson and Bagwell, Dallas gastro-enterologists, as consulting dietitian; Mrs. Helen H. Tooley, formerly chief dietitian, Veterans Hospital, Fairpoint, Md., to Veterans Hospital, Dallas; Mrs. Ben Lanier, formerly instructor in foods, Baylor University, to Gaston Avenue Hospital, Dallas, with Betty Stamper, a June graduate of Texas State College for Women, as assistant dietitian. Dr. Mina Wolf Lamb, Texas Technological College, Lubbock, is author of an article published in the *American Journal of Diseases of Children* entitled, "Basal Metabolism Study on Eight Nursery School Children."

Winnie Temple, who served overseas as an Army dietitian, is now assistant dietitian at Texas Technological College. Ruth D. Heckler, recently returned to Texas from Kansas, where she was president of the Kansas Dietetic Association, is now lunchroom supervisor with the Board of Education, Fort Worth. Priscilla Rogers, recent graduate of Texas State College for Women Administrative Course, is doing relief work at Baylor University Hospital. Ila Mae Rinn completed her internship at Montefiore Hospital, New York, and returned to Baylor University Hospital staff in February. Bea Heatley has succeeded Mrs. Mary Bowling Clark as manager of dormitory food service at Southern Methodist University.

A field trip through the U. S. Cold Storage Company plant, with short talks on processing. freezing and handling of foods, was conducted for the Dallas association, January 10. The business firms who participated in the trip served a buffet supper.

Jane McGuire, formerly head of the Home Economics Department of the public schools of Highland Park, was recently married to Mr. W. O. Alvis, Dallas. Theone Chadick, main kitchen dietitian at Baylor University Hospital, was married in October to Lt. James M. Flanagin, Jr., Teague, Texas.

News From Advertisers and Exhibitors. Mead Johnson and Company, Evansville 21, Ind., submits the following note about summer diarrhea in babies: "Casec (calcium caseinate), which is almost wholly a combination of protein and calcium, offers a quickly effective method of treating all types of diarrhea, both in bottle-fed and breast-fed infants. For the former, the carbohydrate is temporarily omitted from the 24-hour formula and replaced with 4 packed level tablespoons Casec. Within a day or two the diarrhea will usually be arrested, and carbohydrate in the form of Dextri-Maltose may safely be added to the formula and the Casec gradually eliminated. One to three packed level teaspoons of a thin paste of Casec and water, given before each nursing, is well indicated for loose stools in breast-fed babies."

A new illustrated booklet, *On Bringing Up Baby*, has been prepared for Quaker Oats Company and is available from Mary Alden, Quaker Oats Company, Chicago 16. Another recent publication of the same company is the seventh edition of *Vitamin Summary and Composition of Quaker Cereal Foods.*

Among recent publications from the kitchen of Mary Hale Martin, Libby, McNeill & Libby, Chicago 9, are: *Timely Recipes Starring Canned Foods*, family-size recipes including several non-freakish salads and a number of salad dressings and sauces; a chart giving various canned products, varieties or color, most popular styles and sizes, packing medium and seasoning, container sizes, approximate weight, approximate measure, approximate number of servings and average serving, nutritive value, and suggested uses; *Quantity Recipe Book* which includes also a canned foods serving chart, and serving-cost chart; *Canned Foods Text Book*, second edition; an abbreviated *Canned Foods Textbook*; three wall charts in color on can sizes and the canning process.

Dietitians in the Veterans Administration

According to a circular released by the Veterans Administration, March 5, 1946, the following are the education and experience requirements for dietitians entering the service under the designation P-1 to P-5 inclusive.

P-1: *Education*—Applicants must have a bachelor's degree from an accredited college or university, including or followed by the satisfactory completion in a college or university of recognized standing of the following special courses: 12 semester hours in chemistry (to include general, organic and biochemistry); 6 in biology (to include human physiology and bacteriology); 6 in foods (to include food preparation and meal planning); 6 in nutrition (to include diet in disease); 6 in institution management (to include quantity cookery and organization management); 9 in social sciences (to include psychology; sociology and economics); 3 in education (to include at least one of the following: educational psychology, methods of teaching or principles of education). If the required courses were completed prior to January 1, 1945, or in the case of veterans whose college or university course would have been completed by January 1, 1945, if same had not been interrupted by entrance into the Armed Forces, academic credit from a college or university of recognized standing for the required courses will be accepted and the following substitutions allowed: 6 semester hours in nutrition or 3 in nutrition plus 6 in institution management; 12 in chemistry (to include general, organic and biochemistry or food chemistry).

Experience—Successful completion of full 12 months of training in a recognized hospital training course for student dietitians approved by the Administrator of Veterans Affairs (applications will also be accepted from otherwise qualified students now enrolled in such courses, subject to submission of proof of completion of the course), or completion of at least 3 years of successful experience as a dietitian in a hospital of at least 50-bed capacity including (a) diet therapy (b) teaching (c) planning adequate menus (d) supervision of employees in food preparation and service (e) ordering food supplies and equipment and (f) food cost control.

P-2: Applicants for this position must show education and experience as listed above and one additional year of supervised experience.

P-3: Applicants for this position must show education and experience as listed above and a minimum of 2 additional years of experience, one of which must have involved supervision of one or more trained dietitians.

P-4: In addition to the education and experience as listed above applicants must have had 3 years' additional experience, at least 1 year of which must have been as an administrative dietitian in a hospital employing trained dietitians.

P-5: In addition to the education and experience as listed above applicants must have had 4 years' additional experience, at least 2 years of which must have been as an administrative dietitian in a hospital employing trained dietitians.